

AMERICAN VETERINARY REVIEW

EDITED BY

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I.

AMERICAN VETERINARY REVIEW.

APRIL, 1910.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, February 15, 1910.

THE FLOOD AT ALFORT.—The news of the great calamity that has struck France by the rising of the charming little river, the Seine, has been spread all over the world, and the terrific details of the disasters would scarcely be in their proper place in our journal. But yet there is an episode of the flood which cannot be ignored, and that we think deserves in our pages a notice of record and one of admiration.

Alfort, the great veterinary school, the one that every veterinarian knows of, the one that every veterinarian that has come from the old and the new world to visit France and her capital has seen; they have all called at Alfort; they recollect her magnificent entrance with the statues of Bourgelat, Bouley and Nocard; they remember the grand "Cour des hopitaux," the grand public clinical center; they have admired the beautiful park * * * all those have been covered with the ugly and angry waters. The work of the school had to be stopped. The school was evacuated. The students had to leave. They did it only when the danger was imminent. And the dormitories, the class-rooms, the dissecting rooms, the amphitheaters were at once organized so as to serve as lodging for the soldiers and sailors who were acting as saviours in the submerged surrounding districts.

But soon the blockade was complete. Water was all over. And then came the flow of the *refugees*—the poor people, men,



The rise of the Seine. The ferry-man from National Bridge to the Bridge of Tolbiac.

women and children who were chased away from their homes by the torrent in furor; and, with them their animals; horses, cattle and dogs, they all came to take refuge in the school from the very first hour of danger.



Administration Building of the Veterinary School, Alfort,
to left of picture, behind boatmen.



On the "Berthon." Professor Barrier, Director of the Veterinary School, Alfort,
giving some instructions.

The faculty, the director of the school, Prof. Barrier, the professors and a few of the students that had remained gave succor to all. The devotion of every one and their generosity for all those to whom they offered shelter, food, clothes and comfort were admirable, and the conduct of every one in those sad hours deserve the admiration of the entire profession.

For future years, with the inundation of Alfort and the noble and eminent succor that she gave to such a frightfully suffering



Inundations of January 29th, 1910. Houses in Alfort; the principal thoroughfare.

population, 1910 will be recorded among the memorable pages of the history of that great institution.

Through the kindness of Prof. G. Petit I have obtained some concise statistics. The school has prepared 13,122 meals, 450 refugees were lodged, fed and clothed, and besides, 789 others from the surrounding villages were also fed. There were 1,104 pieces of clothing and shoes given to those who were remaining in the school, and to outsiders 1,038.

We hear that Director Barrier is preparing for publication, to appear in the *Recueil* of March, a long history of the sad

event, which will be extensively illustrated. We have managed to obtain a few photos, which, if they come out well, will give our readers a few of the sad souvenirs of Alfort under water.*

* * *

THE REVIVAL OF OLD METHODS.—Of late it seems as if some of the therapeutic agents of olden times were gaining a new life and if their beneficial effects were again going to be called upon by veterinarians as well as by physicians.

In April, 1909, the *Revue Generale* of Prof. Leclainche was stirring the attention in favor of *setons* whose therapeutic or hygienic usefulness had lost almost all their prestige since half a century. Microbiology, then just born, having, notwithstanding the plea made by Bouley in favor of the seton, killed among the majority of practitioners the belief they had in their old counter irritant, which was and has been since so terribly used and abused by empirics. And yet how many are the cases on record which tell of the good results which had been gained by the application at the proper time of the old classical piece of tape introduced under the skin; and if it is only to recall of few successful instances, how many cases of rebellious lameness, to only mention those which had resisted all kinds of treatment and were rapidly removed by the introduction of a seton.

In human medicine, it is *venesection* which finds a defender in Doctor E. Renaux, who at the Société Clinique de Bruxelles has revindicated *venesection and its indications* in a masterly communication. Venesection has had great days of favor and times of decadence, and notwithstanding the efforts of Hayem, Huchard, Arloing and others, it does not hold in human therapeutics the place to which it is entitled. Yet its indications are numerous. It manifests its action upon the pulse, which first becomes accelerated, more or less as the escape of blood is more

* Apologies are offered for notes in connection with cuts, which were translated by the junior editor, and may, therefore, not be as full or explicit as they perhaps could have been, if written especially for the article by some one familiar with the actual conditions there.

rapid and abundant, but it soon returns to normal. The tension of the pulse is reduced; first slowly, then more rapidly, and then again slower and slower. The temperature generally lowers down after an abundant bleeding, although it may also rise. One of the most interesting manifestations is shown in the changes of the general nutrition; reducing the mass of the blood, venesection relieves congestion of viscerae, especially the kidneys. Again to the point of view of the blood corpuscles. After bleeding, a diminution in their number is first noticed, and it becomes more marked after a few hours, a phenomena which is due to the dilution more and more marked by the serum. For Doct. Renaux the indications of venesection are quite numerous; pneumonia, acute œdema of the lungs, cardiac affections, cerebral congestion, eclampsia, etc. In conclusion, the doctor says that he ignores the lancet, and following the method that is resorted to in veterinary practice, he employs to puncture the vein of his patients the trocar in the shape of the needle of a syringe of Pravaz of a large size.

* * *

And now another addition is made to the application of these two old therapeutic methods; a third one is spoken of and placed on record in the *Recueil de Medecine Veterinaire*, by two army veterinarians, M.M. Lemire and Ducrotoy. They write on the use of *dry cups* and their applications.

They have used dry cupping in many occasions and have obtained very good results. This is an old weapon of the surgical veterinary arsenal which, perhaps too exclusively, is now ignored. Doctor Bier of passive hyperhemia renown, has revived its use in giving to its effects an interpretation diametrically different to the classical theories.

To this day dry cups were used to relieve congestion; but Doctor Bier has had the original idea of considering and of proving that on the contrary they act in producing a local but deep hyperhemia of the regions upon which they are applied, and that it is precisely to this artificial congestion that their efficacy is

due. And besides, that beneficial action is remarkably manifested upon inflamed tissues, as the supplementary hyperhemia that is produced, assists powerfully the natural defensive hyperhemia already existing. And again, by the suction that dry cupping exercises, it promotes an action of evacuation, it produces a kind of mechanical disinfection in taking or sucking up the pus of abscesses, the inflammatory exudates, the morbid liquids of fistulas, and places the diseased tissues in the best possible condition for natural vital resistance.

M.M. Lemire and Ducrotoy have used the dry cup of Bier, or again a single ordinary glass in which the air was rarefied by the burning of a small piece of hydrophile wadding. The glass is then quickly applied on the skin properly shaved and disinfected. If the rarefaction has been sufficient an active or passive hyperhemia is produced according to the vacuum made. It is sometimes necessary to lubricate the border of the glass with vaseline to facilitate the adhesion. It is better also to have the skin a little moist. Each application must not last more than five minutes, when the cup is removed by allowing a little air to enter the glass. At the place where the cup has been applied, there remains a more or less elevated swelling, round, painful and more or less defined. Cupping can be thus applied on any part of the body. According to the writers, the hyperhemia resulting from the application possesses a treble action: analgesic, bactericid and regeneratrice. It relieves the pain of great traumatism, sometimes so violent, that of synovial suppuration; by the hyperleucocytosis that it promotes, it reduces acute inflammations at the time when they began and shortens their duration when they are once established. It prevents the resorption of septic products and therefore complications; it stimulates the delimitation and elimination of necrosed tissues; it simplifies surgical interference and finally co-operates to the regeneration of injured tissues.

Among the indications where dry cuppings have been used by the two writers they mention, for the treatment of contused and penetrating wounds, for that of suppurating traumatic syno-

vitis of the sheath of the hock joint, for a large and deep cyst of the costal angle of the shoulder, in two cases of broken knees, a wound of the fetlock, abscess of the head, of the neck, etc. All the results have been such that in the use of this method any one is bound to consider it as a most precious therapeutic means at the disposal of veterinarians.

* * *

ABSCESSES OF FIXATION.—Under that name, which I think deserves more, that of revulsive abscesses or of localization, is understood here an old counter irritating or revulsive method; although but little known, which consists in the formation of abscesses by pyogenic subcutaneous injections, it is the method of Fochier.* Having just been considering the old methods of setons, venesection and dry cupping, this subject is not out of place.

In 1875 Doctor Fochier, an obstetrician of renown, remarked in his clinical observations that very severe cases of puerperal fever would improve, sometimes suddenly, as soon as manifestations of localized suppuration would appear, such as an abscess of the breast, of the iliac fossa, of the subcutaneous adipose tissue. But if suppuration did not appear, the prognosis was serious. Starting from these observations, after various attempts, in one desperate case of puerperal fever, he resorted to an injection of oil of turpentine under the skin. An abscess developed rapidly and in a few days the patient had recovered. Since, Doctor Fochier injects systematically in all his severe cases of puerperal fever one or several cubic centimeters of oil of turpentine. If the abscess does not come, he renews it and if necessary increases the dose. And he advances the remark that if the suppuration comes rapidly the patient can be considered as saved, and if on the contrary an abscess is not obtained with the ordinary dose, the case may be considered very unfavorable. In fact the injection becomes an agent of almost positive prognosis.

* (1) Drouin, Rev. Gener. de Medec. Veter. Janvier, 1910.

This new method was first limited to gynecology, but finally, yet not as extensively as one might think, it has entered the domain of general practice, and with it there has been successfully treated severe cases of pneumonia with tendency to suppuration, erysipelas, cerebro-spinal meningitis, typhoid fever and scarlatina. Of course some objections had been made against a method which was rather empirical and needed scientific basis. With those in view experiments were carried out and in the last years it has become more in use, and statistics have been established in its favor.

* * *

In veterinary medicine, the method of revulsion by abscess of fixation is quite old and already in 1884 one of our confrères, Mr. Chassaing, demonstrated that the subcutaneous injections of oil of turpentine in doses of 2 to 4 grammes in horses, of 6 to 15 in cattle, and of 0.50 gramme in small animals, gave fair results in diseases of the chest and in old lameness of the shoulder or of the hip. These were also used by Cagny and others in chronic lameness, in pneumonias, and even in the treatment of hyarthrosis and tenositis. Drouin has also resorted to it in infections of distemper and in pneumonias. He considers the method as a sure, quick and economical derivative.

The chest, on each side of the median line over the projection made by the superficial pectoral muscle, the sterno humeralis, or on the sides of the neck or again the ribs, are the places where the injections can be made, in the subcutaneous tissue using a small glass hypodermic syringe. The ordinary dose for a horse according to Drouin has been in average 5 c. c. on each side. In severe cases the dose can be doubled. If the animal reacts vigorously by the rapid formation of the purulent collection, recovery may be considered as certain. If, on the contrary, scarcely an cedema follows, a fatal ending is very probable.

The abscesses do not require any special attention, they demand the ordinary treatment. But, as says Drouin, can the

method enter into our general practice and would not the formation of an abscess be considered by a critical owner as an unnecessary addition to the ailments of his animal?

I am not sure that it is not an overstretch of my memory, but it seems to me as if I have recollections of similar applications made by some veterinarians in the States years ago. But I cannot find any record of them. I would be thankful if some of my confrères across the Atlantic would give me information on this.

* * *

EXPERIMENTAL SURGERY.—At this time when the "Rockefeller Institute for Researches" is the subject of the attacks made by some of the daily papers, the following will certainly be subjects of actuality.

Under the heading of "Experiments of Dr. A. Carrel," the Director of Rockefeller Institute, the eminent French surgeon, Prof. Pozzy has delivered a lecture, from which I find the following extracts in the *Presse Medicale*.

The starting point of these experiments is in the technic followed by Doctor Carrel for the suture of blood vessels, suture mouth to mouth or end to end with extremely fine needles and threads and with most minutious aseptic attentions.

1. *Patching up of the Abdominal Aorta with a Piece of Peritoneum.*—In a dog of medium size, the anterior half of the abdominal aorta is resected in a surface of 2 centimeters. The vessel is patched up with a double piece of the peritoneum of the transversal abdominalis muscle, of the same animal and kept for several minutes in vaseline. Twenty-two months after the operation, laparotomy. The pulsations of the abdominal aorta are normal, there are no visible marks of the primitive operation, nor reduction in the caliber of the blood vessels. Doct. Carrel performs the resection of a segment of the aorta involving the piece which had been patched up and re-establishes the circulation with a segment of the vena cava. The animal survives.

2. *Fresh Veins are Transplanted.*—In a dog, a segment of the jugular is transplanted on the carotid; six months after the histological examination of the artery shows it having a thick and strong coat. Hence the possibility of treating aneurism by the removal of the tumor and replacing it by a piece of femoral or saphena vein.

3. *Partial Displacement of the Circulation in the Thyroid Gland.*—A dog had goitre. Doctor Carrel anastomoses the peripheric end of the internal jugular vein with the central of the carotid. After several months, the goitre is reduced in size, the jugular and thyroid veins have assumed the aspect of arteries and their dimension has remained normal.

4. *Preservation of Blood Vessels in Cold Storage.*—In the presence of the results thus obtained, it becomes necessary to have at one's disposal blood vessels for rechange, to use when the time comes. Carrel secures on the living animal or shortly after its death, with the most delicate asepsy, pieces of blood vessels, dips them and washes them in Locke's solution and places them in sterilized glass tubes where they are kept in damp atmosphere by the addition of a few drops of water or of solution. The tubes are then closed with the alcohol lamp and put in the cold room at a temperature of 0.1° Centigrade. After six or eight months the blood vessels are still perfect; taken out of the cold room and dipped in warm vaseline, they are ready to be used for grafting. Hetero-transplantation of fresh blood vessels, that is the grafting of a carotid from dog to the abdominal artery of a cat have been done successfully.

5. *Temporarily Removed Kidney is Replaced in One Animal.*—The left kidney of a slut is taken out for a few minutes and put back in its place in the abdominal cavity with sutures of the blood vessels and of the ureters; the animal recovers rapidly. Fifteen days after the right kidney is removed; no bad effect follows, no albumin in the urine; the slut gets pregnant and delivers eleven puppies a year after the operation.

6. *Transplantation of Kidney from One Animal to Another of the Same Species.*—Doct. Pozzy states that he saw at the Institute two dogs, a yellow and a white. The first had one kidney from the second. Both were in perfect health.

7. *Transplantation of Legs.*—Once a complete union by first intention was obtained of the hind leg of a fox terrier, recently killed, upon another dog which had just been amputated. The bones were brought and held together with the Elsberg's splint (perforated aluminum tube introduced in the medullary canal) the muscles, nerves and blood vessels were placed opposite each other, circulation was re-established and in two weeks cicatrization was completed.

* * *

As to whatever good may general surgery gain by those wonderful results, there is no doubt that they will be appreciated all over the world. Although I am not yet prepared to see what opportunities may present themselves for us veterinarians to apply them. Still it is certain that many of them have attracted the attention of others besides the daring director of the New York Institute. Indeed Prof. Garré, of Bonn, has written in the *Deutsch. Medic. Wochensch.* an article on the subject of "Transplantation of Blood Vessels and Organs," where he passes a review of all that has been accomplished so far by him and his assistants. He remarks that the first steps were that of the repairing of lateral wounds in the coats of veins and arteries. Then came the suture of blood vessels end to end; but now the move is to go further on.

Loss of substance in a blood vessel is replaced by portions of another. In the beginning it was a piece of artery for another artery. That piece could be kept for one or two hours in a physiological solution, and as if that was not enough, now that segment of blood vessel was kept for weeks in an aseptic liquid at 0° C. temperature. When these arterial graftings are made, once the circulation re-established, the *vasa vasorum* is filled with blood

and the transplanted segment resumes its own coloration. Heteroplastic arterial graftings which at first failed were finally successful.

Portions of arteries were replaced by venous ones, the permeability was preserved. There was no vascular dilatation and the venous portion took the characters of the artery, in becoming thicker and stronger.

Organ transplantations were tried with the thyroid and the spleen. With the thyroid, as it proved very difficult to suture the so-small thyroid vessels of a dog, the entire thyroid with a portion of the carotid were taken off and the whole transplanted upon the same animal or on another of the same species. The former was a success, the second a failure. The functions of the replaced thyroid were perfect and when it was removed for good after a first recovery, the animal died with all the symptoms of thyroid insufficiency. Garré then reviews the success of Carrel with kidneys. The transplantation of a large piece of intestine with suture of the mesenteric artery have so far proved failures.

* * *

RETROSPECTIVE ECHOES OF THE TUBERCULOSIS CONGRESS IN WASHINGTON.—Veterinarians, who after the great gathering of the A. V. M. A., took an extra vacation, went to Washington and attended to the International Congress on Tuberculosis, had a good opportunity to take in all that had been prepared for the occasion by the Committee of Arrangements and could listen in every section to the papers that were presented and also to the discussions. There was so much to hear, so great and numerous were the attractions, so world-wide known were many of the speakers that to see, hear and profit of every opportunity was rather an undertaking; specially if to all that had to be added the receptions, the excursions and the visits to the exhibition. And yet many of our friends went from Philadelphia to Washington. Section VII. was one of their great attractions. It was the Veterinary Section. They who did go and those who did not visit

Washington have read the concise but excellent report that was published in the REVIEW in its issue of November, 1908, and there have found a very satisfactory proof that veterinarians did not remain indifferent to the great problems of tuberculosis. Far from it, as by their number, the valuable communications they made, the discussions they took part in, and the large attendance that was present at the seatings of their section—everything showed that it was truly a question in which all the members of that great science, Sanitary Medicine, were united and that human physicians and veterinarians were working hand in hand.

But with all that, there must have been something missing. It must have appeared to all that there was an absent link in the chain of all the events that took place in Washington between September 28th and October 12th of that year. This has just been filled; the work is completed. The greatest consecration has come from Washington. The printed *proceedings* have just been issued, and those who are entitled to them by their membership can now complete their visit and refresh their memory.

* * *

These proceedings are a monument of literature, and it is now by their examination that one can conceive an idea of the enormous extent of the questions, of the immense field that the problem covers and of the varieties of points that are related to it. The proceedings are contained in six volumes and they cover nearly 5,000 pages of closely printed matter, with illustrations in many instances. The space allowed in this chronicle and the magnitude of the work will not permit of a detailed analysis. However, let me mention the arrangement and contents of each volume as a means for special references.

The first volume is divided in two parts. The first gives the work of the first and second sections under the titles of Pathology and Bacteriology, Opsonic Index, Conjunctival and Cutaneous Tuberculin Reactions, Serum Diagnosis. The second part which completes the work of the second section treats of Clinical Study

and Therapy of Tuberculosis, Sanatoria, Hospitals and Dispensaries. Volume II. contains section third, Surgery and Orthopedy, and section fourth Tuberculosis of Children.

In Volume III. is found the work done in section five with Hygienic, Social, Industrial and Economical Aspects of Tuberculosis. Volume IV. is also in two parts. In the first is the work of section six with State and Municipal Control of Tuberculosis. In the second part is section seven, with Tuberculosis in Animals and Its Relations to Man.

Volume V., completing the entire official work, relates to Generalities, Opening and Closing Ceremonies, Report of the General Secretary, the Exhibition and the Awards, Officers, Committees and Members. This volume is illustrated with an excellent likeness of the President of the Congress, Theodore Roosevelt.

Volume VI. contains the series of public lectures specially prepared for the Congress. It is edited by the General Secretary and printed as a supplement to the transactions of the Congress. These are *grosso modo* what the contents of the proceedings are.

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While in the article published here in November, 1908, a very good notice was given of the part taken by veterinarians in the work of section seven, and while I cannot give an analysis of all that our profession contributed, I must, however, notice it by a more detailed résumé, and do more justice to the American veterinarians who raised their voices at the meetings of that section.

"Tuberculosis in Animals and Its Relations to Man" was a sufficient heading to bring forward some of our best men. And if at those seatings voices from the old world, as those of Arloing, Bang, Fibiger, Koch and others were heard, many of our confrères did also honor to their profession and have shown that likewise the new world had workers in the good cause.

In part second of Volume IV. papers will be found by Dr. A.

D. Melvin on the "Economic Importance of Tuberculosis of Food-producing Animals; on "Economics as a Positive Factor in the Dissemination of Tuberculosis in Animals," by Dr. O. E. Dyson, of Chicago; on "Bovine Tuberculosis in Louisiana and Some Other Southern States," by Prof. W. H. Dalrymple; on "Dissemination of Tuberculosis Among Animals in Alabama," by Dr. C. A. Cary; on the "Control of Tuberculosis in Domestic Animals in Pennsylvania," by Dr. L. A. Klein; on "Bovine Tuberculosis under Range Condition," by Dr. M. E. Knowles, of Montana; on "Tuberculosis in Range Cattle in California," by Dr. G. S. Baker; on "Tuberculosis in Wild Animals in Captivity," by Dr. W. Reid Blair, of New York; on the "Occurrence and Significance of Tubercle Bacilli in the Feces of Tuberculous Cattle," by Dr. E. C. Schroeder, of Washington; on "Bovine Tuberculosis," by Drs. S. Stewart and A. T. Kinsley, of Kansas; on a "Review of Recent Investigations on Tuberculosis Conducted by the Bureau of Animal Industry," by Drs. J. R. Mohler and H. J. Washburn, of Washington; on the "Intertransmissibility of Tuberculosis," by C. F. Dawson, M.D., D.V.S., of Newark; on "Infection of Swine from Tuberculous Cattle," by Dr. A. W. Bitting, of Purdue University; on "Tuberculous Hogs as an Indication of Tuberculous Cattle," by Austin Peters, of Boston; a "Report of the Results of the Continued Injections of Tuberculin upon Tubercular Cattle," by Dr. S. B. Nelson; on the "Control of Tuberculosis," by Dr. J. G. Rutherford, of Ottawa; on the "History of the Agitation Against Bovine Tuberculosis in Massachusetts," by Austin Peters; on the "Use of Tuberculin in Controlling Tuberculosis in Herds," by Dr. C. J. Marshall; on the "Value of Tuberculosis in the Control of Tuberculous Herds," by Prof. V. A. Moore, of Cornell University; on the Precautionary Sanitary Legislation against Tuberculosis of Domestic Animals in the United States," by Dr. D. Arthur Hughes, of Chicago; and on the "Vaccination of Cattle Against Tuberculosis," by Prof. Leonard Pearson.

It seemed, however, that the monument elevated by the reproduction of the proceedings was incomplete. These needed a handsome crowning. The general secretary completed his work with the sixth volume, which contains the public lectures which were delivered in Washington, Philadelphia, Baltimore, New York and Boston.

In the preface of this volume, I read that it had been arranged to have these lectures delivered in every important city in the country, but that it was found beyond the power of the Central Committee to realize fully such a project, and as it was, it was found necessary to limit the delivery of the lectures as they are represented in that volume.

But how select and what a treat it is to read its contents. Read the headings: "Tuberculosis and its Prevention in Japan," by Dr. Shibasaburo Kitasato, of Tokio; "Tuberculosis of the Heart, of the Blood Vessels and Lymphatic Vessels," by Dr. Andres Martinez Vagas, of Barcelona; on "Social Life and Tuberculosis," by Prof. Gathhold Pannwitz, of Berlin; on the "Modern Procedures for the Early Diagnosis of Tuberculous Infection," by Prof. A. Calmette, of Lille; on the "Causes of the Past Decline in Tuberculosis and the Light Thrown by History in Preventive Measures for Immediate Future," by Dr. Arthur Newsholme, of London; on the "Evolution of the Treatment of Pulmonary Tuberculosis," by Dr. C. Theodore Williams, of London; on the "Biology of the Tubercle Bacillus," by Dr. A. Wladimiroff, of St. Petersburg; "One Hundred Years of Phthisiology—1808-1908," by Prof. Dr. L. Landouzy, of Paris; on "Collateral Tuberculous Inflammation," by Dr. N. Ph. Tendamloo, of Holland; on "Studies on Tuberculosis in Domestic Animals and What We May Learn from Them Regarding Human Tuberculosis," by Prof. Bernard Bang, of Copenhagen; on the "Fight Against Tuberculosis in Large Cities," "The Sanitary Dwelling as a Factor in the Prevention of Tuberculosis," "The City Anti-tuberculous," "Scientific Methods of Construction," by Dr. Maurice Letulle and Aug. Rey, of Paris; on the

"Anti-tuberculous Program," "Co-ordination of Preventive Measures," by Dr. R. W. Philip, of Edinburgh.

As can be seen by the above this volume is possibly the one in which the ordinary reader will be principally interested and the many illustrations by portraits of almost all the lecturers and those of others, men of celebrity on the subject of tuberculosis, will render the volume still more attractive. The first five volumes may find their places in the library of physicians and veterinarians, it is sure, but I am convinced that this last volume will be the one that will be met the most on the table of all, where it will be easy of access and can be readily looked into with interest.

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SUNDRY BIBLIOGRAPHICAL ITEMS.—The good firm, Alex. Eger, of Chicago, which is in the West *the* publishing house for veterinary works, has sent me a little book by Mr. G. Mayall, M. R.C.V.S. The title of it is "Cows, Cow-houses and Milk." Yes, all that? Enough we should suppose for quite a large volume, as no doubt every one of the three subjects command much matter of interest and yet all of them have been treated in just 99 pages, which were found sufficient for the author and filled the 21 chapters of the contents. There are also 16 plates, which, I think, are very good pictures of picked up choice animals. I see the price is marked one dollar.

I have also the *Agricultural Journal of Cape of Good Hope*; the *Quarterly Bulletin* from the Chicago Veterinary College for December, 1909; then *Bulletin* 39 of the Department of Agriculture; the *Index Catalogue of Medical and Veterinary Zoology*, Part 24 and 25, by Ch. Wardell Stiles, Ph.D., and Albert Hassall, M. R. C. V. S., and to close the list, two farmers' bulletins from the Bureau of Animal Industry, No. 378, on the "Methods of Exterminating the Texas Fever Ticks," by H. W. Graybill, and No. 379, on "Hog Cholera," by M. Dorset, M.D.

A. L.

ARMY VETERINARY BILL.

Realizing the great rejoicing that will be felt throughout the entire country, over the passage by the Senate Committee on Military Affairs (after a slight amendment) of bill S. 1692 to increase the efficiency of the veterinary service in the United States army, and of the appreciation that every veterinarian will feel toward the senators that championed the cause of veterinary medicine so ably and at such an opportune time, we have determined to publish the following from the *Army and Navy Register* of March 12th, even though Prof. Schwarzkopf has presented most of the facts in the Army Veterinary Department on page 65 of this issue of the REVIEW, and has there given the remarks of Senator Gallinger, which form a *part* of the following report:

VETERINARY SERVICE OF THE ARMY.

"The Senate Committee on Military Affairs on March 7 reported the bill (S. 1692) to increase the efficiency of the veterinary service of the army. It passed that body on March 9, amended by striking out the word 'mounted' wherever it occurred in the original bill.

The former Secretary of War, Senator Root, asked the chairman of the committee, Senator Warren, about promotions, particularly what rank was open to the veterinarian.

Mr. Warren—In one sense it gives no rank as such to them. It gives the pay and allowances of a second lieutenant for the first ten years, and after that and with a proper examination the pay, and so forth, of a first lieutenant. The bill provides for taking in the old veterinarians or contract veterinary surgeons and employees after passing proper examination—a few of the oldest ones without examination. As to the new class admitted, the bill provides the ages at which they shall be admitted; that they must be graduates of a veterinary college; that they must pass a prescribed army examination; that they must have served

ten years as second lieutenants before being promoted to first lieutenants, and they go no higher than first lieutenant during their service.

Mr. Root—The senator is satisfied, I presume, that the expression: "All veterinarians so appointed shall be on the same footing as that of commissioned officers of the army in respect to tenure of appointment, retirement, pensions, increase of pay" is so limited by the specific provisions of the bill that it can not apply to increase in rank?

Mr. Warren—I will say to the senator I have depended upon the War Department, and that is the language, as I understand it, approved by the Secretaries of War who succeeded the senator from New York. I have assumed, and I think from the language that it does, that it provides what I have said of it as to pay, increase of pay, and tenure of office—that is, the length of office retirement, pension, and allowances.

Mr. Page—I should like to ask the senator from Wyoming if this adds another line of those who are to be retired on half pay, or is the old law in regard to this matter simply re-enacted?

Mr. Warren—Mr. President, this is the condition: Formerly, when we had but few regiments of cavalry, but a small artillery force, and the days of horse doctors, bleeding, condition powders, and so forth, rather than regular veterinary surgeons, we employed men as employees, to be hired and discharged at will. This was unsatisfactory and most expensive in the losses of horse and mule stock. Some years ago, I should say perhaps fifteen, possibly ten, we provided for an examination of the force of men that were then employed, and provided that those who passed the examination should become second lieutenants, so far as concerns the pay, and so forth, exactly as this bill provides; that the others should remain employees.

This bill goes a little further. It provides—and it is a matter of only 42 men altogether proposed for the entire veterinary force for an expense, in addition to the present expense, of not to ex-

ceed \$2,700 per annum until after ten years shall have expired for the second lieutenants, when there will be more of them, of course, as first lieutenants than there are now.

But when the change is made it does away with the contract surgeons and the necessity for contract surgeons and employees, and substitutes a regular corps, which, after providing for the present force, is to be only recruited from young men under 27 years of age, who have been graduated from some reputable veterinary college and who shall be examined and pass under the army requirements. These, then, enter upon the service and serve ten years as second lieutenants, and then, after another successful examination, may be promoted and receive the pay of first lieutenants, retiring finally as first or second lieutenants, as the case may be.

Mr. Gallinger—The senator from Wyoming is aware, but it is well enough to put it in the *Record*, that the requirements of veterinary colleges to-day are quite as exacting as those of our best medical colleges. These men have to go through a curriculum of the same length, studying substantially the same subjects, in addition to which they get, of course, instruction in the treatment of animals particularly. But when a man is graduated from a veterinary college to-day he has given as much time and as much money to acquire his education as a young man who is graduated from one of our very best medical colleges.

Mr. Warren—And with the number of horses and the number of mules employed now in the army, the salary of these men is a mere bagatelle compared with the losses that may occur unless the army has a competent force of medical men to attend the animals.

Mr. Page—The only point I wish to raise is whether we are placing upon the retired list a large number of men who have acted as veterinarians and whom this bill proposes to pension.

Mr. Warren—Now, I see what the senator is probably driving at. This bill places no one upon the retired list or "pension

roll," as the senator terms it, except he shall arrive at the proper age and shall have done the proper service, with the exception of two men, one of whom is now 74 or 75 years old and the other 69 to 71. One has served nearly fifty years, the other has served just a little more or less than forty years. They are kept in the service as hired men because of their very valuable services in passing upon purchases of horses. The department wishes to retain them in that service, and the bill provides that these two may be retired. Undoubtedly these two would be immediately called back into active service under the law on account of their ripe and varied experience, so valuable in assisting our purchasing officers. * * *

Mr. Clay—Can the senator give any idea as to how much annual expense it will add to the expenditures of the War Department? I mean not only considering those who will avail themselves of the benefits of this act, but appointments that may be made hereafter, about what additional expense annually will be entailed upon the government of the United States.

Mr. Warren—We have a computation, over the signature of Mr. Taft, as Secretary of War, in which he states that if all the veterinarians having more than ten years' service and the additional veterinarians be appointed under the proposed bill, the increased annual expense would be not to exceed \$2,700. The only further expense would arise from the increased pay of such veterinarians as would become entitled to it after ten years' service. This bill makes them then first lieutenants, which rank they did not have before."

Giving space to the above report had for its object, however, not *alone* that of pleasing the senses of REVIEW readers in contemplation of the truths that Senators Gallinger, Warren and others gave expression to, but also of placing the veterinarians throughout the country in possession of the facts as they are, and giving them an opportunity of calling the attention of their representatives in Congress to the merits of the bill and urging upon them the importance of its passage.

ORIGINAL ARTICLES.

ROARING.

BY C. A. CARY, B.S., D.V.M., AUBURN, ALA.

The real nature of roaring has not been known many years. The past three decades almost covers the real known history of roarers. The symptoms, methods of diagnosis and treatment have been changed and revised from time to time. The real cause is still unknown. We say the recurrent nerve paralysis and fail to find the cause of the nerve paralysis in many cases. We may find tumors pressing on nerves, injured nerves and a flattened left recurrent nerve where it passes around the arch of the aorta, but so far we are not satisfied with the explanations.

Diagnostic symptoms are few. Roaring on inspiration when standing still, walking, trotting, galloping and when pulling. Some cases will choke down with moderate or severe exercise and pulling. I have seen a few cases choke down when starting to drink water. In my experience "chokers" are more frequently found in mules than in horses. Many cases can be made to roar while standing by pressing the left (paralyzed arytenoid) inward and downward with the finger. Usually the arytenoid on the side of the paralysis lies farther away from the upper border of the thyroid and drops slightly downward and inward. This makes or leaves a notch-like place that can readily be felt by the finger (Williams).

DIFFERENTIAL DIAGNOSIS.—It must be distinguished from roaring caused by pressure of abscesses, tumors, edemas, phlegmons and enlarged thyroids and lymph glands upon the larynx. It must be separated from polypi or pedunculated tumors in

larynx, trachea and nares and collapse of tracheal cartilages. The hand may be inserted into the pharynx and locate tumors; laryngotomy can be done on the standing horse and in case no paralysis is observed, the fingers may be passed up into the pharynx in search of tumors.

OPERATIVE TREATMENT.—It seems that the first form of operative treatment was simple tracheotomy. While this rarely, if ever, cured a true case of roaring, it did restore the animal to a working condition.

The next operation that came into use was the extirpation of the arytenoid. This also proved a failure. Probably Dr. L. A. Merrillat's arytenoideraphy came next in the order of operations. This usually gave negative results. Doctor Anderson, of Nebraska, clips off the infero-posterior end of the arytenoid and the vocal cord. He claims good results, but I have not seen printed records of his results. Dr. W. L. Williams originated the method of removing the mucosa from the laryngeal ventricle on the paralyzed side of the larynx. He at one time employed tracheotomy, cut the cricoid and later sawed in two the thyroid at median line. Lately he has advised me that he will cut only the thyro-cricoid ligament and remove the mucosa of the ventricle. Until within the last two years nearly all operators have used a general anæsthetic. Now it is rarely used and tracheotomy is avoided.

Dr. M. H. McKillip opens the larynx by cutting the thyro-cricoid ligament and sawing through the thyroid in the median line. Then he uses a forceps that cuts out a V-shaped piece cutting through the internal wall of the ventricle and the mucosa. One jaw of the forceps is pushed into the ventricle, the other jaw of the forceps is on the outside of the ventricle; then pressure on the handles bring the two jaws together and this cuts out the V-shaped mucosa in the internal wall of the ventricle. The two borders of the wound are brought together by stitches. When healing occurs tension is produced on the arytenoid and the arytenoid is pulled to the side of the larynx. This operation will not obliterate the ventricle and prevent its catching inspired air. Nor will it pull the arytenoid as close to the side of the larynx

and fix it as will the scar tissue formed after removing the mucosa from the ventricle.

As can be observed by reading the report of cases in this article, I have operated by Merrillat's method and have followed Williams' operation.

Instruments.—One or two sharp scalpels; one probe-pointed bistoury; one pair 5 to 7 inches long sharp pointed curved or flat scissors; one or two pairs rather broad (one-fourth inch) jawed forceps—plug V forceps; two to four cotton or sponge holders for sponging out larynx; retractors, preferably self-retaining retractors, smaller but similar to human laparotomy self-retaining retractors.

The horse should not be fed or given water for twelve to twenty-four hours before the operation. It is better and safer to cast the animal on the ground or a grass plot where the ground surface is slightly inclined. If ground is dusty sprinkle freely with water to lay dust. Cast the horse, tie the limbs in flexed position, roll animal on its back or into a hollow trench on his back. Animal should be on its back with head extended down the incline. Few sacks filled with hay, excelsior or cotton placed along the side of the body of the horse, and one to two helpers on each side, will easily hold the animal on his back. The head should be enclosed in a good strong halter having no throat latch. It will require one attendant on each side to hold the head extended and in straight line with the neck; the attendants on each side hold the nose-piece of the halter with one hand and the ear with the other.

The skin over the larynx is now washed and shaved and disinfected. Cut through the skin, the sterno-thyro-hyoideus, an opening 4 to 5 inches long; wipe away and check hemorrhage; cut into larynx in median line between cricoid and thyroid through the crico-thyroid ligament and mucosa. Avoid cutting the cricoid. Introduce retractors just in front of cricoid extend and fix retractors. The cricoid may be pulled backward with a small tenaculum-like retractor. As per Williams directions grasp the vocal cord and mucosa just at outer border of ventricle on

paralyzed side with plug V forceps and with scissors cut mucosa out of the entire ventricle. Now grasp the balance of the vocal cord and cut it out up to the thyroid. This Williams does not mention, but he may cut out the rest of the vocal cord. I often cut out the other vocal cord so as to give more space for air to enter. I also cut out an elliptical piece of mucosa (one-fourth to one-half inch wide and one-half to one inch long) posterior to and parallel to the posterior border of the paralyzed arytenoid and sometimes I cut out a small piece of mucosa between the paralyzed arytenoid and the base of the epiglottis. The reason for cutting out the mucosa of the ventricle is to obliterate the ventricle and prevent its catching inspired air and pushing the vocal cord and arytenoid out into the air current. Also to permit the cicatrix to draw the arytenoid back to the side of the larynx and fix it. The removal of the piece of mucosa posterior to the arytenoid and the piece at the base of the epiglottis are made also for producing cicatrices that pull the arytenoid to the side of the larynx and fix it there. I always cut out all of the paralyzed vocal cord because in cutting the mucosa of the ventricle I remove part of the vocal cord and the remnant is liable to leave a pointed or ragged edge. Moreover, its removal gives more space in the lumen. The right vocal cord is also removed to give more space.

I am of the opinion that left side paralysis appears first and right side paralysis sometimes (more frequently than we know) gradually appears after we operate for left side paralysis.

The handling of the animal after the operation is second in importance to the operation. Above all things the horse or mule should be kept out in open air in a lot or preferably in a pasture. For the first few days the feed should be soft and it would be safest to feed freshly cooked bran, shorts, ground corn or oats. No hay should be given for at least one week after the operation. All feed and water should be given in box or bucket placed on the ground. Grazing grass should not be permitted for a few hours after the operation; thereafter grass may be the only food. The wound is washed once or twice daily, only on the outside:

no interference with the internal laryngeal wounds—especially do not push sponges, cotton, finger or any kind of swab into the larynx. The less irritation the better. Steaming with hot water



FIG. 1. RIGHT HALF OF LARYNX OF HORSE.

C is the cross section of bezel of cricoid cartilage.

c is the cross section of the small part of the cricoid cartilage.

r is cross section of the first ring of the trachea.

E is a median vertical section of the epiglottis.

Th is a median cross section of the thyroid cartilage.

ra is the right arytenoid, upper part.

V is the right vocal cord extending from near *A* (its posterior attachment to the arytenoid) to *Th*, its anterior end or attachment to the thyroid.

A to *V* is that part of the vocal cord grasped by the forceps when starting to cut out the mucosa of the ventricle.

VE is a little above the opening of the ventricle. The opening is between *VE* and *A*.

A is really a part of the right arytenoid.

Ma is a piece of white paper covering the mucosa posterior to right arytenoid, and is the place where I cut out an elliptical piece of mucosa.

at covers the mucosa between the arytenoid and epiglottis, and is the place where I cut out a small piece of mucosa.

and creolin once or twice a day is helpful in the way of moistening the discharge and may act to some extent as an antiseptic. Upon the second or third day after the operation, the mucosa of the larynx and the peri-laryngeal tissues may become edematous

and produce dyspnea or sometimes "choking down." Pressing open the lips of the laryngeal wound will give instant relief. Adjust in the laryngeal opening a small trachea tube, having an elliptical cross section and a one-way curve. I find that steaming two times daily relieves this engorged condition or edema rapidly and safely. This tube if small and properly made can be inserted without cutting the cricoid. It should be removed for cleaning and also to test the ability of the horse to breathe without it; and, as soon as the animal can get along without it, remove it.

All severe or vigorous exercise should be avoided for at least six months after the operation. I have known cases to improve for twelve to eighteen months after the operation, and all cases make a safe and better recovery when given only slow and moderate exercise regularly every day after the external wound in the larynx heals. If the animal is driven or saddled, the head should not be checked too high nor pulled backward and downward producing pressure on the larynx before complete recovery.

My experience leads me to believe that the failures that have been attributed to collapse of the tracheal rings in tracheotomy and collapse of the cricoid are not always due to such changes, but rather to defective operations.

Case 1.—Black mule 12 years old; bad roarer; choked down at times when pulling.

First Operation.—Tracheotomy by cutting two rings; cast; anæsthetized; larynx opened by going through crico-thyroid ligament and cutting cricoid; left side completely paralyzed; removed left vocal cord; put one stitch around left arytenoid according to Merrillat. Three months after healing of all wounds, mule was no better; still choked down at times.

Second Operation.—Tracheotomy; cast; anæsthetic; opened the larynx as before. The cricoid cartilage had united without collapse and so had the rings of the trachea. The wounds made by cutting out the left vocal cord and stitching back the arytenoid had healed, leaving smooth surfaces, but the left arytenoid was still motile. As the right arytenoid moved over toward the left

excessively, I decided to remove the right vocal cord and cut out an elliptical piece of mucosa posterior to the right arytenoid. After cutting out the right vocal cord and removing an elliptical piece of mucosa, I stitched back the right arytenoid according to Merrillatt. I also cut out an elliptical piece of mucosa posterior to the left arytenoid. Recovery from the operation took place in three weeks. For two or three months this mule made some noise, but she worked on a farm for two years and another year as a delivery mule. Have not later history.

Case 2.—Black mule 7 years old; chokes when pulling; tracheotomy; cast; anæsthetic; cut cricoid and crico-thyroid ligament; complete left side paralysis; excised left vocal cord and stitched back left arytenoid as per Merrillatt. Recovery from operation in three weeks. One year later mule no better.

Case 3.—Mule 6 years old; choked down at times when pulling and when driven rapidly; put in tracheotomy tube and mule worked with tube in place for one or two months when tube was removed and mule never choked down thereafter during the next two years. This mule must have had some temporary cause for choking, which cause was removed by natural processes while tube was in place.

Case 4.—Bay gelding 9 years old, weight 1,100 pounds; Kentucky bred driving horse; produced a loud coarse roar when trotted short distance or driven up hill; trachea tube inserted and kept in place for three weeks; tube removed. Roaring same as previous to insertion of tube.

Case 5.—Bay mule 10 years old. Owner claimed mule choked with slight exercise. A trotting test just before operation made mule roar very badly, but mule did not choke down; trachea tube inserted. Mule cast and before the one loose hind limb could be caught, mule died. In casting, mule struggled vigorously, but did not suffocate for want of air, since trachea tube was kept in place. Post-mortem revealed inferior cervical and inferior thoracic glands enlarged; pleural cavity one-fourth to one-third full of serum and a little serum in pericardium.

Case 6.—Sorrel mare mule 10 years old, roars loudly with moderate exercise and chokes down at times when pulling wagon or plowing; tracheotomy (cut 2 rings); cast; general anæsthetic; laryngotomy (cut cricoid); complete left side paralysis; removed both vocal cords and an elliptical piece of mucosa posterior to left arytenoid; removed trachea tube in one week. Mule taken home in four weeks. History followed during next three years. Mule did all kinds of farm work and never choked or roared thereafter.

Case 7.—Black gelding 12 years old, weight 1,150 pounds; had been a roarer for more than a year; a scar and partially collapsed rings evidenced a previous tracheotomy; tracheotomy at a new place (cut two rings); cast; general anæsthetic; laryngotomy cutting cricoid; complete paralysis of left side; removed mucosa from left laryngeal ventricle; cut away all of left vocal cord and an elliptical piece of mucosa posterior to the left arytenoid. In four weeks all parts had apparently healed. In short driving test horse made some noise. Horse was taken home and driven and continued to improve for one year, when he completely recovered.

Case 8.—Sorrel gelding, 12 years old; had been a bad roarer for eight months; presented shifting lameness and some signs of osteo-porosis; tracheotomy (cut 2 rings); cast; general anæsthetic; laryngotomy (cut cricoid); both sides completely paralyzed; no movement of arytenoids except during act of swallowing; removed right and left vocal cords; excised an elliptical piece of mucosa posterior to both arytenoids; removed mucosa lining left laryngeal ventricle. Horse left hospital one month after operation and at that time could not be made to blow by a trotting test. Two months after operation I inspected horse and found it very lame and stiff; facial bones enlarged (osteo-porosis), and the horse would blow with slight exercise. The cricoid and the two cut tracheal rings had partially collapsed. Owner disposed of horse to a negro farmer, who has since made two cotton crops with the horse, and while I have not examined the horse, yet the owner says he has "good wind."

Case 9.—Very fat, chunky mule, 8 years old; had been a roarer for five months; must be pulled hard or galloped to produce roaring; tracheotomy; cast; no anæsthetic; laryngotomy



FIG. 2. LEFT HALF OF LARYNX OF HORSE IMMEDIATELY AFTER OPERATION FOR ROARING.

C is bezel of cricoid cartilage.

c is smallest part of cricoid cartilage.

r is first ring of trachea.

E is epiglottis.

A is about the middle of the left arytenoid.

T is the thyroid cartilage.

VO is just below place where left vocal cord has been cut away.

Ve is in front of left ventricle cavity after mucosa lining of ventricle has been removed. Above *Ve* is a space where piece of mucosa was removed; it is between the arytenoid and epiglottis.

M is just back of place where an elliptical piece of mucosa has been cut away. This is behind the posterior border of the left arytenoid.

Looking at the photograph one can readily see how the cicatrices forming after the wounds heal will draw the arytenoid back to the side of the larynx and that the cavity of the ventricle will be obliterated.

(cut cricoid); left arytenoid cartilage almost still but not completely quiet (partial paralysis); right arytenoid moved over far beyond the median line; mucosa removed from left laryngeal ventricle which was very small; cut away both vocal cords and an

elliptical piece of mucosa $\frac{1}{2}$ inch long and $\frac{1}{4}$ inch broad posterior to left arytenoid; removed trachea tube in one week and in two weeks mule went home, traveling about thirty miles. It was a mistake to exercise mule on such a long drive so soon after operation. Six months after operation mule was reported to roar as bad as ever. I have been unable to get a later history.

Case 10.—Black gelding, 15 years old; roars very vigorously; sometimes chokes down; had been roaring for one year or more; tracheotomy had been done at some previous date. Operation—Tracheotomy (cut two cartilages) in a new place; cast; no anæsthetic; laryngotomy (cut cricoid); complete left side paralysis; removed right and left vocal cords and mucosa from left ventricle and a piece of mucosa posterior to left arytenoid. At some time during operation horse fractured or crushed the body of a dorsal vertebra and in struggling to rise he ruptured the diaphragm. The above conditions were found on post mortem. The recurrent on left side was traced back to place where tracheotomy had been previously done and the nerve was lost at that place.

Case 11.—Brown mule, 15 years old; roaring for several months; roaring brought out distinctly on exercises; tracheotomy (cut two cartilages); no anæsthetic; laryngotomy (cut cricoid); left side completely paralyzed; cut out both vocal cords; the mucosa of the left ventricle; a piece of mucosa posterior to the left arytenoid and a piece of mucosa anterior to the supero-posterior end of left arytenoid, between this part of the arytenoid and epiglottis; had profuse hemorrhage. Mule was steamed daily with small quantity of creolin in one to two gallons of hot water; washed outside with two to five per cent. creolin solution; fed soft food (dampened bran, shorts and scalded oats) from box on ground; left out doors in small pasture lot where he could graze; fed little or no hay and all food and water was taken from the ground. Mule made rapid recovery from operation and in four weeks went home; could not be forced to roar at time he was taken home. Mule has worked for two years at all kinds of farm work and has never showed any signs of roaring.

Case 12.—Blind brown mule, 14 years old; large and poor; would weigh if fat 1,300 pounds; roars when standing; history unknown. Operation—No tracheotomy; no anæsthetic; cast; laryngotomy without cutting cricoid; complete left side paralysis; the mucosa on the left arytenoid appeared rough and thickened; removed mucosa of left ventricle, the right and left vocal cords and a piece of mucosa between the base of the epiglottis and left arytenoid; hemorrhage was profuse; time of operation, twenty minutes; mule was apparently hungry and began to eat grass immediately after regaining his feet. This kept the blood from the wounds gravitating into the pharynx. This mule was left in small pasture lot and permitted to live almost exclusively on pasture grass. The external laryngeal wound was washed daily. The mule for four days had some difficulty in breathing because the laryngeal mucosa became swollen, but the mule made good recovery in twenty days; mule was then turned into a large pasture. The operation was done on May 29th and on July 10th mule, being totally blind, fell into a deep ditch, landing on his back, where he remained for twenty-four hours before discovered; when pulled out was so nearly dead that he was destroyed. Being absent, one of the veterinary students failed to trace the left vagus and recurrent, but he removed the larynx. The larynx shows perfectly smooth healing of all the places in mucosa, and there was left a very small pocket where the left ventricle mucosa had been removed. This pocket would hold about 1 c. c. and was smooth. The left arytenoid was pulled back to the side of the larynx, giving ample room for passage of air.

Case 13.—Bay gelding 6 years old, weight 1,000 pounds; shipped from East St. Louis to Alabama; had a mild attack of influenza; 30 days later developed roaring. This horse was first operated on by Doctors Jackson and McGuire, of Birmingham, Ala. In this operation a portion of the left arytenoid was removed. The external laryngeal wound healed, but the roaring did not improve. Some time later I saw the horse and he could not get along with a trachea tube. When I operated on the horse, a trachea tube was already in place; horse was cast; no anæs-

thetic; laryngotomy (cut cricoid at same place as previously cut). The remnant of left arytenoid had not healed over and budding granulation growths were surrounding the exposed necrosing cartilage. The granulations were clipped off and the surface of the necrosing cartilage removed. The mucosa of the left laryngeal ventricle was cut out. The left and right vocal cords removed. Doctor Jackson reported some two months after the operation that horse was no better.

Case 14.—Black gelding, 8 years old; shipped from East St. Louis to Alabama; was a roarer in East St. Louis; roars very badly when driven; in fact, would choke down if pushed for six blocks; no tracheotomy; no anæsthetic; cast; laryngotomy without cutting cricoid; complete left side paralyzed; right side partially paralyzed; removed mucosa of left ventricle, both vocal cords, also a piece of mucosa posterior to left arytenoid and a piece of mucosa at base of epiglottis between left arytenoid and epiglottis. The day following the operation larynx badly swollen; horse breathing with difficulty; cut cricoid and inserted curved trachea tube. This tube was retained in place much of the time for four days; recovery from the operation in twenty days, was kept in small pasture for six weeks and then sent home. Owner drove horse in a walk every day for a few weeks and then sent him to the pasture. Operation was done April 21st and the following August horse was taken from pasture and could not be made to roar by forced driving; was then sold, going to another state.

Case 15.—Bay gelding, 9 years old; history unknown; examination of trachea and larynx indicated that horse had been operated at some previous time; on exercise made a very rattling noise; cast without anæsthetic and without trachea tube; laryngotomy, cricoid had partially collapsed and was cut again. The left arytenoid had been completely removed; a few granulation buds and rough scar were present. During inspiration a long piece of tissue was drawn down into the larynx and during expiration it was blown back into the pharynx. With long forceps this membrane was caught, pulled out as far as possible, and

clipped off with scissors. About one inch of the upper end of the epiglottis was clipped away with it, leaving the larynx with a large empty space where the arytenoid had been removed and a stub of an epiglottis. This horse was kept in small pasture for five weeks; fed soft feed from the ground. The external wound healed; the horse still coughed when eating and drinking and passed quite a lot of food and water back through the nasal passages. The horse was taken away by the owner in May, 1909, and January 1, 1910, was living and still coughing and blowing feed out through his nostrils. The strangest thing is that this horse had never developed a case of inhalation pneumonia.

Case 16.—Black mule 6 to 8 years old; had been troubled in breathing for weeks; sent to French and Jackson's Hospital in Birmingham, Ala; pronounced roarer by French and Jackson. I was invited to operate. Mule had casting harness on and stood in operating room breathing apparently normal. Doctor French advised tracheotomy, but I had operated on several without anæsthetic and without tracheotomy, hence I decided to operate without tracheotomy. In casting, the mule struggled vigorously and attendant was very slow in catching up and fastening loose legs. Mule showed signs of asphyxia and tracheotomy was performed, but mule died. Post-mortem—Small tumors had been removed, one on each side at base of neck, lower part on inside of point of scapulo-humeral angle. These proved to be extensions of sarcomatous tumors from anterior part of thorax. Anterior part of thorax in front of heart was filled with mass of sarcomatous tumors, and the remaining part of thorax or lung cavities were about one-half full of serum. Pressure of the tumors on the pneumogastrics and upon the recurrent laryngeal nerves must have caused the coaring. The limited breathing capacity and the obstructed laryngeal lumen caused the asphyxia. Very likely mule would have died with tracheotomy tube in place before mule was cast. An attempt to hurriedly trace the vagus and recurrent laryngeal was made and the nerves were lost in the mass of tumors. Possibly pressure of the tumors on the heart, blood

vessels and vagi nerves may have had something to do in causing the death.

Case 17.—Bay saddle horse 9 years old; shipped from East St. Louis as a roarer; roars with severe exercise in saddle and in harness; no tracheotomy; no anæsthetic; cast; laryngotomy (did not cut cricoid); complete left side paralysis; removed mucosa from left ventricle, cut out both vocal cords; recovery from external laryngeal wound in four weeks; horse kept in small pasture lot for nine weeks, at this time forced driving produced very little noise. Horse was taken home and it was reported owner drove horse too vigorously. Operation September 18th and the following January horse still roared. This horse had every indication of making a complete recovery when he left our hands.

Case 18.—Black male mule 7 years old; weight 1,300 pounds; had been used in dray at West Point, Ga.; exercise brought out the roaring very prominently; pressure of finger on left arytenoid produced roaring. The left arytenoid was readily pressed inward with finger. Mule was cast without tracheotomy and no anæsthetic was used. Laryngotomy without cutting cricoid; complete paralysis on left side; removed the mucosa of left ventricle, both vocal cords and a piece of mucosa posterior to left arytenoid. This mule's hind feet were pulled high upon the back and fixed to rings on the back band. During the operation mule struggled vigorously. Time, thirty minutes from beginning to end of casting and operation. Upon rising, mule acted exactly as if he had azoturia paralysis in hind limbs; rubbing, rest and a little walking exercise gave relief. Mule was left out in small pasture and the third night when it was quite cold and chilly, and the mule was down and unable to rise the next morning. He was raised by means of slings and in two hours the slings were removed and that was the last of the azoturia symptoms. Mule recovered in four weeks and could not be made to roar by prolonged trotting. Two months since the operation, and the mule is reported by owner as sound.

Case 19.—Standard bred mare 8 years old; shows some rheumatic loin lameness; roars when pushed for speed; cast without tracheotomy; no anaesthetic; opened larynx without cutting cricoid; partial paralysis of left side; removed the mucosa of left ventricle, both vocal cords and a piece of mucosa posterior to left arytenoid. Mare made a rapid recovery from operation and at present writing, two months after the operation, mare is reported as very much better and makes very slight noise when forced up hill. This mare will get better and finally entirely recover if not driven or worked too hard during the first six months after the operation.

Case 20.—Black mare mule 7 years old. This mule had changed owners some eight times during the past year on account of being a roarer. The mule choked on being driven up hill pulling a buggy with two persons in it. Cast without tracheotomy; no anaesthetic; opened larynx without cutting cricoid; found complete left side paralysis; removed mucosa from left ventricle, both vocal cords and elliptical piece of mucosa posterior to left arytenoid. This mule's hind legs were pulled high on back and not sufficiently flexed, and she struggled vigorously during operation and got up with difficulty and was partially paralyzed in both hind limbs for some hours after the operation. In course of a week this lameness disappeared. Mule recovered from operation in twenty days. At present (seven weeks after the operation) mule does not roar.

THE regular monthly business session of the B. A. I. Veterinary Inspectors' Association of Chicago was replaced with the third annual banquet of the association Saturday evening, March 12, 1910, at "The Saddle and Sirloin Club," in their beautiful new banquet hall, which was artistically decorated. Eighty-five banqueters were gathered at the festive board, who not only relished the elaborate menu, but also enjoyed the terse and instructive toasts and responses. The B. A. I. Sextette aided greatly to the evening's entertainment by rendering a few of their choicest selections.

LIP-AND-LEG ULCERATION OF SHEEP. *

THE WORK OF THE BUREAU OF ANIMAL INDUSTRY FOR THE SUPPRESSION OF LIP-AND-LEG ULCERATION OF SHEEP.

BY A. D. MELVIN, CHIEF OF THE BUREAU OF ANIMAL INDUSTRY.

For many years there have existed in the United States a group of diseases of an ulcerative nature affecting animals of various species and attacking various parts of the body. These affections, which have been known by such names as foot-rot, necrotic dermatitis (or inflammation of the skin), necrotic stomatitis (or sore mouth), and other terms, have been found by scientific investigation to be due to one and the same germ, known as the necrosis bacillus; consequently they have been grouped under the general designation of necrobacillosis, and may be considered as a single disease manifesting itself in various forms.

The Bureau of Animal Industry had occasion to study this disease as long ago as 1902, and during the period since that year it has made careful investigations and studies of various forms occurring in different species of animals. An article on foot-rot of sheep and another dealing in general with the necrosis bacillus were published in the Bureau's annual report for 1904, and a bulletin was issued in 1905 with special reference to the forms known as calf diphtheria and sore mouth in pigs. In 1906 an importation of Swiss goats was found affected with a disease which it was at first feared might be foot-and-mouth disease, but which proved on investigation to be necrobacillosis, and an opportunity was thus afforded for a study of the disease at that time.

Until recently the nature of the disease in the United States in most instances has been mild, but within the past year or two

* Presented at the recent convention of the National Wool Growers' Association at Ogden, Utah.

it has assumed a malignant form among sheep in Wyoming, Montana, and some of the other Western states, where it has especially affected the lips and legs of the animals (and in many cases the genital organs), and has received the name of lip-and-leg ulceration.

It is my purpose at this time to discuss the nature of the disease only in a general way, and to discuss more especially the situation in the Western states during the past year or more and the steps taken by the Bureau of Animal Industry to suppress the disease. The technical side of the subject is presented in an accompanying paper* by Dr. John R. Mohler, chief of the Pathological Division of the Bureau.

The first information received by the Department of Agriculture indicating the serious character that the disease had assumed among sheep in the Northwest was conveyed in a telegram of November 23, 1908, in which it was stated that there was a serious outbreak of what was called foot-and-mouth disease in three counties of Wyoming, and asking that the Bureau send an expert to make an investigation so that proper steps might be taken to deal with the trouble. This report, coming at a time when we were engaged in combating an outbreak of foot-and-mouth disease in the East, and when it was not known how far the contagion of that disease might have spread, caused grave apprehension that foot-and-mouth disease might have reached the range country of the West, where it would have been a much more difficult and serious problem. I therefore took immediate steps to have the disease in Wyoming investigated, and within a week reports had been received from two of our inspectors, Drs. R. H. Treacy and E. J. Cary, to the effect that the disease was of a necrotic nature and not foot-and-mouth disease. It is hardly necessary to add that this information was very gratifying and relieved the fear that had been felt.

It appeared, however, that the disease affecting sheep in Wyoming was really a serious matter, so a number of additional men were sent by the Bureau to examine flocks at different places and

*Will be published in the May issue of Review.

to make a careful and thorough examination and study of the disease. Large numbers of specimens were sent to the pathological laboratory at Washington and were there examined by scientific methods that could not be used in the field.

The result of these further investigations confirmed the diagnosis already made and left no doubt that the disease was a malignant form of necrobacillosis. Attention was then directed to the study of methods of treatment, and steps were taken to disseminate information as to the character of the disease and the measures that should be taken to cure it and prevent its spread.

In the early period of the outbreak the Department recommended that affected animals be segregated and given careful treatment by hand with proper disinfectants. This seemed to most sheep owners to be an impossible method of procedure, on account of the large number of animals affected and probably also because such treatment was so different from and so much more difficult than any method that they had ever before been obliged to use in handling their sheep. It should be understood that at this time there had been no work done looking to the treatment of large bands of sheep running upon the open range. The next expedient resorted to in this emergency was the dipping in an antiseptic solution of the exposed sheep and those but slightly affected, with the expectation that this might check the disease and cure these slight cases. This treatment, however, seems in many instances not to have met with the success that was expected of it, and to-day owners are returning to the hand treatment of all affected sheep, as originally proposed by the Bureau. The failure of dipping to give satisfactory results in all cases was probably because some sheep were actually infected before dipping and because in some cases the disease was contracted after dipping by the animals being placed in infected corrals, pens, or cars, or being driven over infected trails.

At first it was hoped that as the affected territory was limited, the outbreak might be suppressed by local measures without the necessity of resorting to federal quarantine. Furthermore, the Bureau at this time had not finished its work of eradicating foot-

and-mouth disease in the East and was in no position to spare either the men or the money to take up in a vigorous way the suppression of lip-and-leg ulceration in the West. As the time went on, however, and the malignant form of nebrobacillosis continued to spread, it was considered best to declare a federal quarantine on sheep in eight counties in Wyoming, and this was done by the Secretary of Agriculture on August 6, 1909, to take effect August 12. This action was taken only after conference with the authorities of Wyoming and other states, and after receiving requests from those officers and from numerous sheepmen that the Bureau do what it could to check and eradicate the disease.

During the month of August, while Secretary Wilson was on a trip of observation of the Department's work in the West, he was appealed to by some of the sheepmen at Rawlins, Wyo., and he directed that I confer with them later and render whatever assistance the Bureau could give in an effort to control and eradicate the disease. A meeting was therefore held at Cheyenne on August 30, which was attended by a large number of prominent sheep raisers, and by the governor, the state board of sheep commissioners, and representatives of the state wool growers' association, as well as by several representatives of the Bureau of Animal Industry. The situation was discussed very fully as far as it was understood at that time with reference to the best methods of combating the disease. At that time the Bureau representatives had not completed their investigations as to methods of treatment, which they had commenced only a few months before.

Following this conference another meeting was held, at which the state board of sheep commissioners, representatives of the state wool growers' association, and representatives of the Bureau of Animal Industry were present, and a draft of the Wyoming Order No. 29 was tentatively decided upon.

As a result of these meetings, and at the request of the sheep owners, the Bureau undertook to assist in carrying out the order requiring dipping and the hand treatment of affected sheep, which at that time was thought to be the most expeditious method of dealing with the disease.

The first federal quarantine order, which took effect August 12, prohibited the interstate movement from the quarantined area of sheep affected with lip-and-leg ulceration. It permitted the interstate shipment of exposed sheep to recognized slaughtering centers for immediate slaughter without dipping, but required the dipping of exposed sheep for interstate shipment for stocking or feeding purposes. Healthy unexposed sheep were allowed to be moved interstate from the quarantined area when accompanied by a certificate of inspection by the Bureau of Animal Industry. The quarantined area was slightly changed at the request of the Wyoming board by an amendment effective September 15.

On November 22 the terms of the quarantine were somewhat altered so as to provide for a reinspection in less than seven days after inspection and dipping, and if necessary a second dipping, of sheep not diseased, but which were a part of a diseased band, before they could be moved interstate for breeding purposes, and also to provide that the state or territorial officials should assume the responsibility of permitting exposed sheep to be moved without dipping for feeding purposes into their respective states or territories.

As is always the case in enforcing quarantine measures, some inconvenience and hardship were occasioned, and there has been objection on the part of sheep owners to the stringency of the measures applied. It is impossible to enforce a quarantine in such a way as to be effective in preventing the spread of a contagious disease and at the same time to avoid hardship to stock growers and shippers.

The shipping of exposed sheep to market centers for slaughter, and the occasional receipt at such places of sheep that had developed the disease en route, resulted in many instances in great loss to the owners on account of the low prices that they were obliged to accept.

The measures prescribed by the Department were made just as lenient as they could be, considering the nature of the disease, as the Department felt that it should not make its regulations un-

duly oppressive and should extend every facility to sheep owners for marketing their sheep consistent with the nature of the disease and with proper sanitary precautions.

In this matter the Bureau is standing between two conflicting interests. The sheep raisers in the infected area, on the one hand, wish to have their stock let out for marketing or feeding. The buyers and feeders in other parts of the country, on the other hand, want to be protected against the purchase of exposed sheep in which the disease afterwards develops. In this situation we have done our best to be fair to both sides. Nevertheless, complaints have been received from eastern feeders that the disease has broken out in sheep bought by them after having passed inspection, and the Bureau has been asked to make settlement for losses resulting therefrom.

The nature of the disease makes it impossible for even the most careful and expert inspector to detect the presence of the infection in all cases before it has manifested itself in actual lesions, and this fact was a strong reason for requiring not only the inspection, but the dipping of all exposed sheep, or sheep which, while apparently healthy, had formed part of diseased bands.

There has been some complaint on the part of sheep owners that Bureau inspectors have held up sheep which did not have lip-and-leg ulceration, but merely had sore mouths caused by frosted grass or the coarse, rough feed of winter. It is significant, however, that sore mouths have not only been observed in grazing sheep, but have also been found in suckling lambs before they had commenced to eat herbage of any sort.

It must be remembered that necrobacillosis in all its various forms, whether mild or virulent, is an infectious disease, caused by the same germ; and further, that it is also what is known as an inoculation disease; that is, the necrosis bacillus requires for its entrance into the body an impaired or broken tissue. The effect of frosted herbage, hard wiregrass, and other similar substances is to produce wounds into which the bacillus may enter and cause disease. When sheep are injured in this way and apparently have only the mild form of sore mouth, in territory

where the malignant form of the disease prevails and where the wounds are very likely to be infected with the germs, it is only a matter of a little time when the disease is likely to develop in them.

Reliable evidence has been obtained in a number of instances showing that the disease was undoubtedly contracted by healthy sheep from infected premises, and it is very probable that many outbreaks have been produced through infected trails, cars, loading chutes, etc.

With regard to the requirement of dipping, it may be said that the disinfection by dipping of sheep that have been exposed to a contagious disease of this kind before allowing them to be placed with healthy sheep is a requirement that is in entire accord with the best scientific knowledge regarding contagious diseases. The disinfection of such sheep is required for the same reason as the disinfection of harness, utensils, and equipment in a stable in which animals affected with a contagious disease have been kept; that is, even though certain animals are not actually affected with the disease, if they have been in contact with diseased animals or infected premises, they are likely to have the virus on their wool or on their bodies in the same manner that such virus might contaminate any inanimate object that had come in contact with diseased animals.

Bearing in mind the nature of the disease, the limited information regarding its extent, and all the facts which I have stated, it is difficult to understand how any more lenient method could have been adopted by the Department of Agriculture in dealing with the disease. If it is to be controlled in any effective manner it is essential that more or less stringent measures should be taken, and the Department has endeavored to make its requirements no more strict than necessary, and to permit the movement and marketing of sheep with just as little interference as possible, consistent with effective work. We have already had complaints of eastern buyers as before stated, that the disease was breaking out in sheep which had passed inspection.

An example of the damage caused by necrobacillosis in other species than sheep and also of the danger that would result from its spread is found in the case of the San Luis Valley of Colorado. Hog raising is an important and paying industry in that valley, but has been greatly interfered with by necrobacillosis, which has affected hogs there for several years. It seems likely that if the malignant form of necrobacillosis should become transferred to other sections where hog raising is extensive, such as the Middle West, the same disastrous results might follow.

If we are to succeed in controlling this disease, the efforts of the federal and state officers must be backed by the co-operation of the sheep raisers. If each individual flockmaster would apply effective treatment and cure the disease in his sheep and eradicate the contagion from his corrals, the disease could be sooner and more easily stamped out and the troublesome quarantine restrictions removed. Many owners have treated their sheep, but it is necessary that this should be more generally done. The disease yields to proper treatment in most cases, and effective methods of treatment have been prescribed by the Bureau of Animal Industry and by state veterinary officers. It is within the power of the sheep raisers, by cleaning up their flocks, to hasten greatly the time when the quarantine can be raised, and the Bureau earnestly desires the help and co-operation of all who are interested in bringing about that result.

Even in the case of the mild form of sore mouth as it occurs in lambs, it would be much better if the owners would keep these lambs on their ranges or premises until the disease has run its course and the lambs have become well. This would only require holding them for a few weeks longer, and they could then be sent to market in good condition and without any likelihood of being held up.

I want the stockmen of the country to realize that the object of the Bureau's work is to protect and benefit their industry, and that in all our work we always have this object plainly in view. We must look at the matter in a broad way, however, and consider the good of the live-stock industry throughout the country

as a whole. It is not to be thought for a moment that a progressive nation such as ours would permit an injurious and destructive contagious disease of live stock to spread all over the country just because effective measures for its control would entail some inconvenience and hardship on the stock raisers in a limited area.

But the object of our work is not solely to protect the sections of the country where the malignant form of the disease has not spread. The interests of the sheep raisers in the infected territory demand that the disease should be controlled; and while the process may be somewhat burdensome to them for a time, the ultimate result will be greatly to their benefit. So whether we view the subject in a broad way from the standpoint of the live-stock industry of the country as a whole, or from the narrower standpoint of the interests of certain limited sections, the work of quarantine and suppression of a contagious disease can only be regarded as beneficial in the end.

In endeavoring to control and eradicate contagious diseases of animals, however, the Bureau of Animal Industry always tries to proceed in such a way as to accomplish that result with the least possible disturbance and inconvenience to the movement and marketing of live stock. We endeavor to combine scientific knowledge with practical common sense. We are always willing to listen and learn, and are glad to confer with those engaged in the live-stock industry and to carry out their wishes so far as possible. It has been very gratifying indeed for me and my assistants to be able to meet with the wool growers and the various state sanitary officers and to discuss this subject from the different viewpoints. I trust that this discussion has resulted in all of us acquiring more information on this very important subject, and that this conference will be of benefit to the sheep industry.

CALIFORNIA, SEPTEMBER 6-7-8-9, 1910.

COCCIDIOSIS OF CATTLE AND HORSES.*

BY JOHN REICHEL, V.M.D., IN CHARGE OF THE LABORATORY OF THE PENNSYLVANIA STATE LIVE STOCK SANITARY BOARD.

In 1907 under the direction of Dr. Leonard Pearson, Chronic Bacterial Dysentery, or Johne's Disease, in cattle was discovered in Pennsylvania in the laboratory of the Pennsylvania State Live Stock Sanitary Board. Since then the disease has been found in other states. A study and some experimental work with Chronic Bacterial Dysentery has since then been a part of the work of the laboratory and all cattle reported with a chronic form of dysentery receive our attention.

Late in 1908, Dr. W. H. Ridge, of Trevoise, Pa., called our attention to a cow on a farm in Montgomery County in this state with all the symptoms of Chronic Bacterial Dysentery, and this cow was sent to the experimental farm of the State Live Stock Sanitary Board to take part in experiments with Chronic Bacterial Dysentery. This cow died within a short time and the clinical diagnosis of Chronic Bacterial Dysentery was not confirmed at autopsy and subsequent examinations in the laboratory of specimens. The cattle and later the other animals upon this farm in Montgomery County were separately examined, during the year 1909, including sixty-three cattle. Rectal scrapings were made of all of the cattle early in 1909 followed by the examination of the feces taken from the rectum of all the cattle again, the horses, goat and feces gathered from two of the chicken houses early in 1910. In all of the specimens collected, except in the feces from the chicken houses, bodies were found in the smears stained as for acid-fast bacilli, which varied from

* Read before the meeting of the Pennsylvania State Veterinary Medical Association of March 8, 1910, though previously announced at a meeting of the Keystone Veterinary Medical Association, February 8, 1910.

rounded to oval in shape, taking on the red stain. They appeared most abundant in the cattle, although several of the horses showed them in fairly large numbers in the feces. These same bodies were found in the specimens of the cow sent to the experimental farm in 1908, and in another sent from the same farm early in 1909 which also died, showing all the symptoms of Chronic Bacterial Dysentery, but in which no evidence of Chronic Bacterial Dysentery could be detected at autopsy and laboratory examination made. With the finding of these bodies in the feces of all cattle, horses and goat upon this farm, from which two cows died of a chronic dysentery and in which the same bodies were demonstrated in the feces and scrapings of the rectal mucous membrane, two adjacent farms were visited and rectal scrapings taken from six cows on one farm and five cows on the other. No such bodies were found in any of the eleven specimens.

Two calves kept in an enclosure upon the experimental farm of the State Live Stock Sanitary Board, in which the two cows were kept from the Montgomery County farm, were found to be the only two cattle of sixteen from which rectal scrapings were taken in January, 1910, to show these bodies. The fourteen cattle in which no bodies were found in the feces are kept a considerable distance from the enclosure in which the two calves, apparently contracted the infection under natural exposure. One of the calves was killed in January, 1910, to obtain fresh material, and the bodies already referred to were found in the feces and in the scrapings of the tips of the mucous membrane, which showed red foci resembling grossly the lesions seen in Chronic Bacterial Dysentery. No acid-fast bacilli were found. The small intestine showed an extensive enteritis, the mucous membrane aside from showing the tips of the irregular folds reddened, was covered with a gray slimy coat. Scrapings of the mucous membrane of the small intestine showed more of the bodies than the scrapings of the mucous membrane of the rectum. The mesenteric lymph glands showed red foci beneath the capsule, in which the bodies were demonstrated in small numbers in

the smears made. Sections of the rectum and small intestine show many of these bodies within the epithelial cells of the mucous membrane, in the largest numbers in the small intestine.

Unstained the bodies are seen rounded and oval in shape, 2.5 to 5 microns in size, of a definite outline, many having a double walled appearance. Inner structure can be seen, which is well brought out in those stained with iron-haemotoxylin. The shape, outline, inner structure and presence of the bodies in the epithelial cells is conclusive proof that they are coccides. They are smaller than the coccides (2.5 by 5 microns) that are known to infest cattle in foreign countries. It is believed that this coccidium is pathogenic for cattle and capable of producing a form of chronic dysentery. Although the coccides were found in the feces of the goat and horses on the infected farms, no symptoms have been observed in either goat or horses.

JUBILEE DINNER OF ALUMNI ASSOCIATION OF THE NEW YORK-AMERICAN VETERINARY COLLEGE.—If any graduate of the New York College of Veterinary Surgeons, the American Veterinary College, or the New York-American Veterinary College fails to receive a letter from the secretary from any cause, this notice is to inform him that there will be a meeting and jubilee dinner on Wednesday, April 20th. The meeting is called for 2 P. M. at 141 West Fifty-fourth street, and the dinner at 7 P. M., at Reissenweber's, Fifty-eighth street and The Circle (Eighth avenue), New York City. The number of years devoted to the teaching of veterinary medicine by these three schools (now one) aggregate practically a century, being 99 years in round numbers, and the features of this jubilee dinner will be such that no alumnus can afford to be absent. So as to facilitate the work of the dinner committee, it is suggested that you write at once to any member of the committee: Dr. W. C. Miller, 459 W. Forty-third street; Dr. Robert S. MacKellar, 351 W. Eleventh street, or Dr. Robert W. Ellis, 509 W. One Hundred and Fifty-second street, New York City, enclosing check for \$3.50, the price per plate, requesting that they mail you a ticket *at once* and reserve a good place for you at the table.

HORSE DOCTOR IN TROUBLE,

BY H. A. HELA, M.D.C., GRANITE FALLS, MINN.

W. H. Coons, of Canby, Minn., was brought before the district court of this place and had to stand trial for a malpractice suit. The plaintiff is a farmer living near Canby and claims that he lost a mare in foaling on account of Coons' carelessness.

Coons is connected with a livery business at Canby, and said he had been practising veterinary medicine off and on for the last thirty years. He is about 60 years of age, puts up a good appearance, is quite eloquent in his talk, and his expressions are convincing and emotional. He carries two valuable books with him. The biggest one is a stock book which has stood the test for about thirty years and gives the treatment for all the diseases of horses, cattle, swine, sheep, dogs, cats and poultry. The smaller book is U. S. government special report on horses, and even this book Coons considers very valuable. He says he used to have all the other veterinary works, but they burned down when his office went up in the smoke. Besides the two books, Coons exhibits one big foal hook and an osteotrite. He is a warm defender of professional rights, and it pleases him to talk of us veterinarians.

Coons is called on the stand first and testifies something like this: One day last May he was called to plaintiff's farm and he reached there about 8 o'clock P. M. and found a mare trying to foal. He feels the mare and finds anterior presentation with the head turned back. Both front feet are in the passage and protrude about two inches on the outside. He could not find the head, so he takes his osteotrite and cuts both front feet off about the knee. He could not find the head now even, and in an attempt to turn the foal, he takes hold of the hind legs, but could

not turn the foal. Then he takes his osteotrite and cuts off the hind legs about the hock. This way he works for about eight hours, and about 4 o'clock in the morning, after having exhausted all human training and skill, he gives up and says to the owner: "I bet twenty-five dollars there isn't a man in the state of Minnesota who can get that colt out of her."

Plaintiff testifies that he called Coons to assist a mare in foaling and when Coons reached the place and examined the mare, he said: "We have to cut the colt all to hell." While Coons worked in the mare he used a big foal hook, which slipped and tore the mare several inches, causing bleeding. Coons used ropes and had a livery man to help him to fasten the ropes on the foal's legs. They killed the mare and on post mortem found one rope on one hind leg and the other rope on one front leg. When Coons noticed this, he exclaims: "My God, if I did not have the ropes wrong I would have saved your mare."

Coons testifies now that it was not a mistake on his part, but that he fastened the ropes that way for the purpose that he could get the foal nearer to him so he could cut the foal's body in two with his osteotrite and deliver it in two pieces.

Several witnesses were heard, but they testified same as above. Three veterinarians were also called to give expert testimony, but only one, in behalf of the plaintiff, was put on the stand.

After a few hours' deliberation the jury rendered the verdict: Defendant Coons is found guilty of malpractice and has to pay the value of the mare, one hundred and seventy-five dollars (\$175.00) with interest from May, 1909.

Defendant Coons applied for new trial, which was granted, and the case will come up again in June.

DR. G. E. THOMAS, Billings, Montana, in forwarding a copy of the program of a special meeting of the Montana Veterinary Medical Association, held at Billings, February 9-10, says: "Our association is in its infancy and membership small, but we made a good showing here and have bright prospects for the future." The program certainly indicates a good meeting judging from the subjects treated and their authors.

REPORTS OF CASES.

SOME REPORTS OF CASES.*

By W. J. MARTIN, V.S., Kankakee, Ill.

A CASE OF OPEN JOINT.—On April 10th of this year I received a message from Mr. C. to visit his farm, as he had had a valuable young mare badly injured in a runaway. On arrival at the farm, I learned that Mr. C., while in the field working four big horses on a "Pulverizer," the animals had become frightened and made a strenuous attempt to get away. In the mixup, the tongue of the implement plunged into the ground and broke short off near its insertion into the machine; this had thrown Mr. C. from the seat and at the same time threw a young mare that was hitched on the "nigh" side of the machine down; when she was quickly dragged by the other horse up against the revolving knives of the implement.

When matters were finally straightened out it was found that the fallen mare had been badly injured by the sharp blades, on the external surface of the left hind leg. Previous to my arrival, the mare had been placed in a box stall, where, owing to the excitement, as well as the loss of considerable blood, she soon laid down with the injured limb underneath the body. On getting her up, the injured limb was seen to be thoroughly soaked with urine from the floor.

On examining the injured leg, a sharp incision was found about six inches in length, situated on the external surface of the tarsal joint, on a line with the junction of the calcaneum and cuneiform bones. The incision extended down to the bones of the tarsus for its entire length. At the lower orifice, synovial fluid was discharging. The mare did not manifest much pain or suffering aside from being somewhat excited and nervous. The fact that the animal had lain down and thereby rendered the parts liable to septic infection caused me to give a guarded prognosis to the now anxious owner.

* Presented at twenty-seventh annual meeting of the Ill. Vet. Med. Ass'n, December, 1909.

Hot antiseptic fomentations were used to cleanse the entire joint, *sapo viridis*, U. S. P. was then applied to the edges of the wound and the hair was removed with a razor. The joint was again fomented with the hot antiseptic solution, and the incision into the joint was entirely filled with boracic acid; the joint was then swathed in absorbent cotton and roller bandages applied.

As the mare was young and strong and appeared to be abundantly able to stand up, at least for a few days, it was decided as best not to put her in slings, but to tie her head up so that she would be unable to lie down and thereby soil the leg. The dressing was not interfered with until the fourth day, when it was removed, and a nice large clot of synovia was found resting snugly at the base of the wound. The joint as a whole was now dressed with an antiseptic emollient ointment, but none of this was permitted to enter the wound, which was again filled with boracic acid and done up as before. The general appearance of the mare at this time was very encouraging, she ate well, did not experience a great deal of pain in the joint, and stood up well.

The second dressing was allowed to remain in position for five days, when it was removed. And it was then seen that there was but a small amount of synovia on the cotton and healing was making rapid progress. From this time forward, the mare made a rapid and uninterrupted recovery, and at the end of twenty days the bandages were dispensed with and equal parts of boracic acid and hydrated alum were dusted on the parts several times daily to heal the ununited edges of the skin. When healed, there remained but a slight cicatrix of the skin, and but a slight enlargement of the joint without any lameness.

A UNIQUE CASE OF CHOKE.—On June 7th of this year I received a message from Mr. R. to come to his farm forthwith, as one of his best mares was choking. On reaching the farm the following account of his troubles was given to me by Mr. R. At noon he had given the subject (a fine mare aged three years of the draft type) a small feed of oats. The animal apparently being very hungry or greedy, attempted to swallow the entire amount at once; in this she was unsuccessful, and a case of choke was the result. Mr. R. being alone on the farm at the time, became somewhat excited, and in an endeavor to relieve the mare he seized a cheap twenty-five cent whip which was close at hand, and with this he endeavored to push the mass of oats down the mare's throat. In this maneuver he was highly successful, but alas, on attempting to withdraw his improvised probang, twelve

inches of it remained in the pharynx. On adjusting the speculum and widely extending the mare's mouth, the hand could be passed deeply into the pharyngeal region where the fingers encountered the foreign body with its upper end resting about at the junction of the larynx and the esophagus. Attempts to remove the object with the fingers proved unavailing, as but two of the middle fingers could be made to encompass it. A long slender splinter molar forceps was procured and with this instrument the whip butt was easily removed. The mare was of a very quiet disposition, and hence the trouble of chloroform anesthesia or esophagotomy was avoided.

The laryngeal parts were swabbed with a weak solution of borax and the animal's head tied up for the night. A guarded prognosis was given, because the foreign body had been in situ for about eight hours and fatal laryngeal complications were feared. For five days the mare was unable to partake of either water or food; after this date, she drank water with difficulty, and could masticate a small amount of succulent green food. Hot fomentations were applied several times daily around the throat, and followed with inunctions of camphorated oil; an abscess developed on the internal mucous surface of the larynx which at one time threatened suffocation, but ruptured just prior to the time tracheotomy was decided upon. After the evacuation of the abscess, the mare made a rapid and complete recovery.

A PECULIAR ACCIDENT.—On October 1st of this year I was summoned to attend a horse in the adjoining county that had during the night previous stumbled into a section of a field harrow that had been carelessly left in a field where the horse was at pasture. The right fore foot of the animal had been firmly wedged between two rows of teeth on the implement in so firm a manner as to render useless all efforts of the horse to free himself. During its struggles the animal had fallen over on its right side with the hind part of the body on the harrow, while the head and shoulders rested on the ground. In this predicament the horse was found the next morning by its owner. During its struggles one of the harrow teeth had penetrated the external wall of the hoof just above the coronary band and downward for a distance of two inches. Some idea may be gained of the frantic struggles of the animal to release himself, when it was seen that one of the heavy harrow teeth had been bent to a right angle by the weight and exertions of the horse.

On my arrival, which was in the afternoon, the animal presented a frightful appearance. The right side of the head and neck was swollen to an enormous extent. The right eye was swollen entirely shut, though the pupil was not ruptured; the membrana nictitans protruded around the entire lower border, and was greatly swollen. The lips were greatly swollen and retracted, so that the incisor teeth were exposed. The right flank and hip were also bruised and swollen, wherever the weight of the body had rested on the harrow. Severe lameness was present in right fore foot that had been injured by the harrow tooth.

The owner thinking that the animal would never recover, was anxious to "use the ax"; but to this procedure his better half strenuously objected, the animal being her driving horse, "and not afraid of automobiles," and insisted that I be sent for. Hence my appearance on the scene. The old horse (some 12 or 14 years old) appeared cheerful out of his remaining good eye; he was in splendid health and condition previous to the accident which gave me some encouragement to undertake the treatment of the case. The swollen head and neck were first thoroughly fomented with warm water and antiseptic solutions impregnated strongly with alum. Deep incisions were then made through the swollen tissues of the face, neck and lips, and large amounts of bloody serum was squeezed therefrom, which afforded great relief to the patient. After the scarifications were concluded, the parts were again fomented, and when dry, annointed with antiseptic linseed oil. The injured foot was treated likewise, and was not bandaged. This treatment was advised to be continued at intervals of a few hours, as septicemia was feared. As there was not much difficulty experienced by the animal in breathing, the tracheotomy tube was not used, although the owner was advised that it would probably have to be used later on; and to advise me if difficult breathing should occur.

As the case was eighteen miles from my office, I informed the owner that I would return on the third day, in the meantime, should the animal die, he was to notify me. On my next visit I found the animal much improved, the swelling had greatly subsided, and the horse was contentedly munching on some green clover hay. The warm fomentations and oil embrocations were ordered continued, though at longer intervals, and the animal made a good recovery, with the exception of severe lameness in the foot which had been injured by the harrow tooth; and this also has gradually yielded to proper treatment.

I report this case for the sole purpose of calling attention to the fact that we should not be too hasty in forming an unfavorable prognosis and refusing to treat, even the most desperate appearing cases, because such do oftentimes recover under the most unfavorable circumstances, when given rational treatment.

CYSTIC AND URETHRAL CALCULI.

By Dr. C. W. SPRINGER, Uniontown, Pa.

Foxhound, eighteen months old, admitted to hospital on November 4, 1909, with history of urinary trouble for past six weeks, especially after a fox chase, when he would have much tenesmus and only a dribbling of urine.



Dog from which 2 oz. Cystic Calculus was removed November 9, 1909
Picture was taken on December 15, 1909.

EXAMINATION.—Upon passing catheter an obstruction was encountered at posterior end of bone in penis; urethral calculi.

I then palpated the bladder bimanually; a large, hard mass could be distinctly felt about the size of a hen's egg.



Cystic Calculus removed from eighteen months' old Foxhound. Stone weighs 2 oz. and measures six inches in circumference. Dog made good recovery.

OPERATION.—Removal of stone was advised and consent granted, November 9, 1909.

A catheter was passed into urethra until it came in contact with obstruction. An incision was made in urethra over end of catheter and calculi removed. The catheter was then passed into bladder, which was irrigated with boric acid solution.

After disinfection of skin, an incision was made through abdominal wall on left side of penis and the bladder exposed. An assistant now placed finger in rectum and pushed bladder upward and forward. An incision was made longitudinally through the bladder wall, which was greatly thickened, and the stone extracted by means of a pair of small bitch obstetrical forceps.

The bladder was then closed with two rows of continuous Lembert's sutures of catgut.

The abdomen was closed with a continuous catgut suture and the skin with interrupted silk sutures.

POST-OPERATIVE TREATMENT.—A catheter was passed daily for four days, or until the urine was passed voluntarily. Water was given ad libitum and dog kept on light diet for ten days. Bowels were kept open.

Recovery was protracted but uneventful.

Stone weighs 2 oz. and measures six inches in circumference.

TERATOID DEVELOPMENTS IN TESTICLES OF HORSES.

By B. F. KAUPP, M.S., D.V.S., Pathologist, Colorado Agricultural College.

Teratoid growths originate from germs or cells that have been extruded during early foetal development. The dermoid

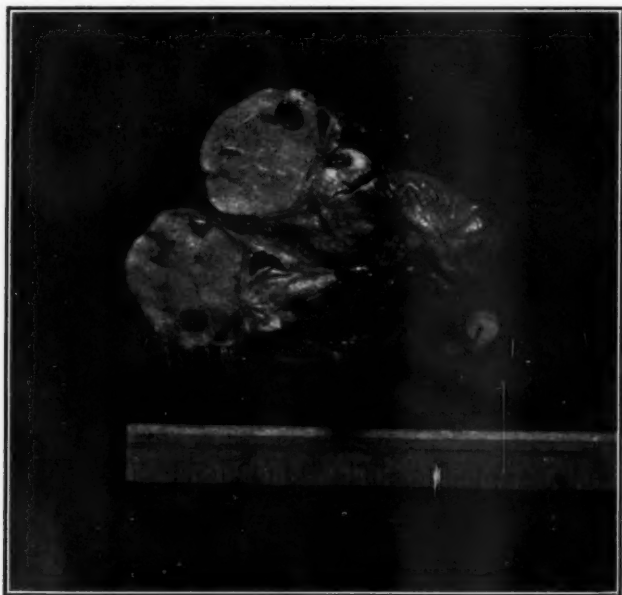


FIG. 1.

cyst is an inclusion of cells of the ectoderm. In the dermoid cyst there is found similar structure to the outer skin. The stratified

epithelium lining the cavity is supported by a dense layer of connective tissue. Hair is developed from well-developed follicles. There is also found glands. The contents of the cyst consists of a dirty brown fluid which consists of the secretions from sweat glands, fatty material and desquamated epithelium.



FIG. 2.

The dermoid cysts in cattle and horses are most often found in the region of the neck. Dermoid cysts are found in birds and contain feathers. These cysts are called *Cystomapenniferum*, or feather follicles. The palpebral tertia occurs in the palpebral region of cattle and dogs and is due to faulty closure of the palpebral fissure.

In Fig. 1 can be seen the sectional surface of a testicle from a cryptorchid horse. *a* indicates two small dermoids filled with hair and a dirty brown fluid, consisting of exfoliated epithelia, fatty material and serum. The major part of the testicle is composed of loosely arranged connective tissue.

Tooth material is sometimes found in testicle and ovaries as well as in other parts of the body, other than the normal place for their development. These teeth are accounted for by sup-

posing that they are the result of misplaced embryonic cells. Fig. 2 shows a photograph of a testicle from a cryptorchid horse. This testicle contains eight compound teeth. Each tooth is surrounded by a connective tissue capsule. *a* indicates three of the teeth. *b* indicates the cord. Fig. 3 shows a microscopic

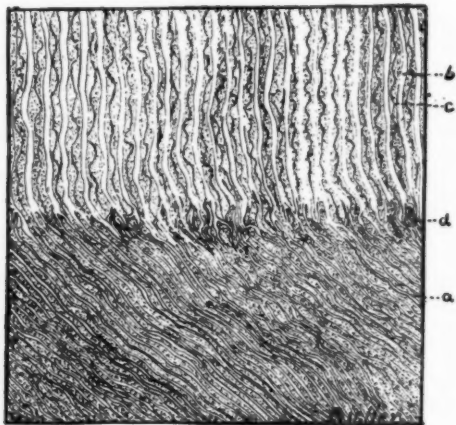


FIG. 3.

section of this tooth material. *a* shows the enamel tubules; *b* the dentinal tubules; *c* the dentinal fibrils; *d* the juncture between the dentin and enamel.

The tooth material for microscopic examination was first decalcified in 10 per cent. hydrochloric acid, then imbedded in paraffin in the usual manner for section purposes. Section stained in hematoxylin and eosin and clarified in oil of cloves.

Both of these testicles were smaller than the normal testicle of an adult horse.

SOME PARASITES IN SHEEP AND HORSES.*

By Dr. C. C. STEVENS, Sandusky, Mich.

Case 1. A four-year-old Western horse.

Symptoms—Ailing about three weeks; found paleness of mucous membranes; fairly strong pulse, 38-40; respiration normal; one eyelid and one ear drooped, and would stand in whatever position it was left in; temperature 105.

* Presented at special meeting of Mich. State Vet. Med. Ass'n, Saginaw, Jan. 25, 1910.

Before arriving home from call, was informed that horse was dead. Went back and held post mortem. Found a quantity of yellow serous fluid in abdominal cavity, also some in thoracic cavity; internal organs apparently normal. Upon opening stomach, found it contained about sixty *strongylus armatus* and found about eighty in intestines; found thirty-eight tapeworms; in large colon found apparently thousands of worms attached to mucous coat in clusters from one-half to two inches long.

Case 2. A seven-months-old colt.

Found it dead on arrival. On post mortem found six or seven feet of small intestines completely plugged with *strongylus armatus*; stomach was also filled with the same parasite; found over eighty tapeworms.

Case 3. Owners had lost two lambs the last few days; upon going to the premises, found one just dead and two sick. Owner said lambs were smart until about five or six hours before death, during which time diarrhoea was noticed; wander off from flock, stupor, finally coma, then death. Advised destroying one of the sick ones. Post mortem showed internal organs apparently normal, but upon rolling abdominal viscera out, there appeared a vermicular, life-like motion to the bowels. Upon slitting open the bowels, a fold of tape-worm apparently was forced out by internal pressure. It was found that the small intestine was completely plugged; seven worms were found fifty-three feet long, one twenty-eight feet, and several from ten inches to four, five and six feet. Nearly five hundred feet of tapeworms were taken from this lamb.

Case 4. This was the lamb that was dead upon my arrival. Found about the same condition, as also was another one opened at the same time. These lambs run on an old meadow which was good feed for sheep.

A PROLIFIC COW.

AMERICAN VETERINARY REVIEW, New York City, *Editors*:

Many times I have read cases of special interest in the REVIEW, and thought perhaps this one might add to same, so will enclose history and picture.



The case is an eight-year-old grade Ayrshire, owned by Dennis Hurley of this vicinity. In five years gave birth to twelve calves as follows:

- At three years of age, twins.
- At four years of age, triplets.
- At five years of age, twins.
- At six years of age, triplets.
- At seven years of age, didn't breed.
- At eight years of age, twins.

All the calves are living, all presentations normal, with the exception of the last one, which was an anterior with lateral deviation of the head.

Very truly yours,

A. W. BAKER & SON.

Brasher Falls, N. Y.

ARMY VETERINARY DEPARTMENT.

NO PROSPECT OF PASSAGE OF THE ARMY VETERINARY BILL.

After waiting for nearly three months for information regarding the army veterinary bill before Congress, the news finally comes that its passage is not expected during the present session. The principal reason given is that Congress has taken a firm stand in the matter of economy, and that no bills will be passed that increase any branch of the army in numerical strength or pay. The army veterinary bill does not call for an increase in the number of veterinarians, needed as it is, while the increase of pay recommended would be only about \$5,000 annually, which is an insignificant amount of money.

The other cause attributed as holding back our bill is that the Democratic members of the House Military Committee are opposed to it. Two of these were approached by letter, and neither of them stated any objection to the bill. In fact, Representative Hay, the leader of the Democrats in that committee, replied that he would be glad to do all he can to assist in its passage, should opportunity offer itself.

Thus it would appear that the real reason for the hopeless condition of this bill is that it is not strongly enough backed, and that it is looked upon as unimportant. If this bill does not become a law before the general army reorganization bill is introduced into Congress next year, as contemplated, we shall lose heavily in that scheme. The positions of veterinarians, as provided for in that measure, were undoubtedly calculated with a view to a previous passage of the present army veterinary bill. Some culling in the higher positions, at first acceded, has already been done in that scheme on account of the failure of the old bill, and more of it may follow before it comes fully to light, so that we may find ourselves again at the bottom of everybody else.

There has been so little interest taken in the present army veterinary bill by the army veterinarians themselves and the

veterinary profession generally, that those few who have bravely stood by it are thoroughly disheartened. This not so much, to state it again, on account of the loss of benefit that would have accrued from the present bill, but on account of losing the really improved positions contemplated for the future in the new army reorganization scheme.

This is the aspect of the present situation. It will take some severe awakening among the army veterinarians to make good the loss sustained by dragging along the present army veterinary bill for over five years, even opposing it, as it has been, from our own ranks because it embodied some unpleasant features. These will always reappear in any bill presented by the government. And it will need a strong appeal to the veterinary profession in general to show that the passage of a bill which puts the army veterinary service on a respectable footing is not merely for the benefit of forty-two army veterinarians, but that such would have a direct bearing upon the standing, reputation and progress of the whole veterinary profession of America. Not until this is realized and a conscious enthusiasm aroused, can we hope to take another step forward in the evolution of American veterinary science and practice.

OLAF SCHWARZKOPF.

ARMY PERSONAL NOTES.

Drs. Alexander Plummer, 4th Cavalry, and R. H. Power, 4th Field Artillery, have been designated by the War Department to represent the army at the annual meeting of the American Veterinary Medical Association at San Francisco in September, 1910.

Dr. Gerald E. Griffin, 3d Field Artillery, has in the March issue of the *Journal of the U. S. Cavalry Association* an article on "Saddle and Harness Galls," that is one of the best heart-to-heart talks to officers of the mounted service by a veterinarian which we have read in many years. Its memorizing by our young army veterinarians is sincerely recommended, because they all come into the military service utterly unacquainted with the great importance of the subject.

Dr. Coleman Nockolds, 1st Cavalry, now stationed at the Presidio of San Francisco, has not announced the appearance

of a first-born, but we happen to hear of it. There is no vacancy now in the Army Veterinary Corps, and the several threats of resignation from the service have not come true. The good, old army of Uncle Sam is not so bad after all.

O. S.

THE ARMY VETERINARY BILL PASSES THE SENATE.

Since writing the above report, word comes that the Senate has passed the bill: S. 1692, on March 9. This bill was published in the issue of September, 1909, of the *AMERICAN VETERINARY REVIEW*. It is a more satisfactory bill to the younger army veterinarians, as it does not require a re-examination until they have reached ten years of service, when they will be entitled to the pay and allowances of a first lieutenant.

We are pleased to report that there was no real opposition to the bill. Senator Root started an inquiry about the increased rank recommended, against which we know he is hostile. Senator Warren replied there was no increased rank, only an increase of pay, which brought out inquiries from other senators, until Senator Gallinger made the following statement:

"The senator from Wyoming is aware, but it is well enough to put it on record, that the requirements of veterinary colleges to-day are quite as exacting as those of our best medical colleges. These men have to go through a curriculum of the same length, studying substantially the same subjects, in addition to which they get, of course, instruction in the treatment of the various domestic animals. When a young man is graduated from a veterinary college to-day, he has given as much time and as much money to acquire his education as a young man who is graduated from one of our very best medical colleges."

This brief but benevolent statement apparently cut off all further opposition. The veterinarians of Senator Gallinger's state, in fact all of us, should express our appreciation to him for his liberal standpoint taken.

The bill goes now to the House Military Committee. It will be a great deal more difficult to get a favorable consideration there than in the Senate, from reasons well known. Only by a concerted action and enthusiastic support of the whole veterinary profession of the United States can we hope to succeed there.

The members of the House Military Committee should be approached first, asking them by letter to support this bill: "S. 1692, to increase the efficiency of the veterinary service of the army," and then similar letters should be forwarded to all representatives from the various states. Let everyone of our colleagues in civil life, who can muster any influence, do his share in assisting to help this bill pass which cannot but reflect favorably upon veterinary progress in America generally.

O. S.

THE second annual banquet and ball of the Veterinary Medical Association of the Colorado Agricultural College was held in the Masonic Temple, Ft. Collins, Colorado, February 25, 1910. The banquet room was gorgeously decorated with pennants. The reception rooms showed an array of college pillows in cozy corners. The following is the list of toasts: Dr. Geo. H. Glover, toastmaster; "To Our Guests," Mr. Y. R. Balmer; "To the Faculty," Dr. A. W. Whitehouse; Response, Dr. I. E. Newsom; "To the 'Vets,'" Miss Nellie Stiers; "Why is a 'Vet,'" Prof. F. C. Alford. Talks were also made by ex-Lieutenant-Governor Brush and Senator Ammonds, both of the Colorado State Board of Agriculture. An excellent talk was also made by Dr. C. A. Lory, president of the college.

OPPOSED TO DOCKING: When the press of the country becomes thoroughly aroused on the subject of docking horses' tails, this evil will be stamped out. It is encouraging to receive from S. S. Toman, editor of the *Trotter and Pacer*, New York, a letter in which he says:

"We have been getting *Our Dumb Animals* for several years and the writer always peruses it with pleasure and satisfaction. We are in thorough sympathy with the grand work you are promoting and I am proud of the fact that our own paper is very consistent with the course of your paper in the matter of stimulating kindly feeling and sympathy toward all dumb animals. We have always taken a strong ground against the custom of docking and never have allowed the picture of a docked horse to appear in our paper."

An excellent example for other horse journals to follow.
—*Our Dumb Animals*.

CORRESPONDENCE.

SACRAMENTO, CAL., February 21, 1910.

Editors AMERICAN VETERINARY REVIEW, 509 West One Hundred and Fifty-second street, New York, N. Y.:

The quarterly meeting of the Pacific States Veterinary Medical Association was held in this city last Wednesday and Thursday. It was well attended and intense interest was taken in the reading and discussion of the papers by the various veterinarians. The association, while primarily a California institution, has now taken the entire Pacific Slope under its jurisdiction and is rapidly gaining in membership, hoping soon to be one of the largest veterinary organizations on the Coast.

The association resolved to lend its every aid to entertain the visiting delegates on the American Veterinary Medical Association at the annual convention to be held in San Francisco, Cal., September 7th, 8th, 9th and 10th, this year, and to that end appointed a committee to confer with sister associations and the General Committee of the A. V. M. A.

A discussion as to the advisability of establishing a remount station on the Pacific Coast was productive of the following resolution:

Whereas, It is now the policy of the United States War Department to establish remount stations throughout the country, at which young horses purchased directly from the farmers and breeders are trained for army uses, and

Whereas, In the Pacific Coast States large numbers of horses suitable for army purposes are bred and raised, some of which are sold to the government and transported across the country to the remount stations located in Oklahoma, Idaho, and other distant points, therefore be it

Resolved, That in the opinion of this organization it would be economical and otherwise advantageous to the government to have a remount station established at some point in Central Cali-

ifornia, that such station would be of great benefit to the farmers and breeders of the Pacific Coast states, who would thus be provided with a market for their horses close at hand, and that by its establishment the government would effect a very large saving in the transportation of horses, hundreds of which are annually brought across the country from the eastern and middle states by rail and shipped to our island possessions from Seattle and San Francisco.

Resolved, That the matter of the economic value of a remount station in California be called to the attention of our senators and representatives in Congress, and that they be requested to use their best efforts to secure the establishment of a remount station in this state as soon as possible.

Resolved that a copy of these resolutions, signed by the president and secretary of this organization, be sent to each of the senators and representatives in Congress of the state of California.

A long discussion was had over a stallion law. It was discussed in all its phases and it was resolved that the enactment of such a law was of immediate necessity. It is to be modeled after some of those in effect in fourteen states of the Union, and so framed that it will be acceptable to owners and dealers of stallions and at the same time prevent the breeding of unfit or blemished stock. The matter will immediately be brought to the attention of the legislature as soon as it meets in January, and every effort made to enact a law as indicated.

The papers and authors were as follows: "Bacterine in Treatment of Fistula of the Withers," Dr. J. B. Boomer, San Francisco; "History of Veterinary Legislation in California," Dr. Thos. Carpenter, Oakland; "Three Interesting Post Mortems," Dr. N. E. Nielsen, Sacramento.

The clinic was interesting and edifying. (a) "The Extraction of Sixth Molar with Open Molar Cutters"; (b) "Removal of a Portion of Incisors in Old Horse," Dr. Ira B. Dalziel, San Francisco; "Tibial Neurotomy for Relief of Spavin Lameness," Dr. Thos. Carpenter, Oakland; "Goitre," Dr. J. B. Boomer, San Francisco; "Cæsarian Section in the Bitch," Dr. W. L. Williamson, San Francisco; "Removal of Anal Glands of the Skunk," Dr. G. W. Locke, Lockford, Cal.

Respectfully submitted,

N. E. NIELSEN, Secretary.

BIBLIOGRAPHY.

TEXT BOOK OF MEDICAL AND PHARMACEUTICAL CHEMISTRY, by Elias H. Bartley, B.S., M.D., Ph.G., Professor of Chemistry, Toxicology and Pediatrics in Long Island College Hospital; late Dean and Professor of Organic Chemistry in the Brooklyn College of Pharmacy, etc. Seventh Revised Edition with ninety illustrations, 734 octavo pages, cloth. Philadelphia, P. Blakiston's Son and Co., 1909.

This book, from the press of the celebrated medical publishing house of P. Blakiston's Son & Co., contains all the essentials of chemistry needed for the medical student. Covering, in Part I., chemical physics, the author, in Part II., takes up the theoretical chemistry referring to the atom and molecule. While in Part III. attention is fully paid to inorganic chemistry, in which the several groups are given all the necessary space. In Part IV. the author treats, not too technically, organic chemistry, closing with sections on alkaloids, ptomains, toxins, food poisoning, glucosides, proteins, vegetable and biliary coloring matters, poisons and their antidotes. But it is in Part V. that Dr. Bartley has best acquitted himself as the practical chemist that he is known to be. The writer on chemistry is too frequently apt to be a man unmindful of the applications of the science to practical medicine. Dr. Bartley is not one of these. In Part V. he takes up physiological chemistry; the enzymes and ferments; animal nutrition; foods and diet; digestion; milk; colostrum; milk adulterations; the urine. A carefully written table of contents, glossary and index accompany the text.

Works on chemistry are all too frequently flatulent or muddle-headed. Either the writers think it necessary to overload, through the length of several volumes, their work with a multiplicity of words. Like Lord Beaconsfield said of Gladstone, an author on chemistry is too often "a sophisticated rhetorician inebriated with the exuberance of his own verbosity." Or writers on chemistry may, in their dullness, leave unexplained what should be explained, and go explaining things which should not be explained. Flatulency and muddle-headedness are the pitfalls of writers on chemistry. Dr. Bartley in his work has

avoided both evils. The medical student will find in his book the chemical facts necessary to be known before *materia medica* is studied. Should the facts on chemical physics, theoretical chemistry, inorganic, organic and physiological chemistry in the work be mastered, in connection with a quantum of laboratory work, the student will be prepared for collateral work akin to chemistry, and, besides, will have acquired something of practical worth—which is something far better than having a head full of useless chemical terminology. We recommend Dr. Bartley's work to instructors in chemistry in veterinary colleges. Six successful editions have already made it well known in the medical colleges.

D. A. H.

THROUGH the courtesy of Dr. O. L. Boor, secretary of the Indiana State Board of Veterinary Medical Examiners, we are in receipt of a clipping from *The Indianapolis Star* of Thursday, February 3, 1910, which states that veterinarian James S. Culbert, of Muncie, was chosen as Eighth District chairman by the Republican party. They state further that Dr. Culbert has been active in politics ever since he came into the county, having served one term as Jay County chairman and one term as postmaster of Portland. The doctor graduated from the New York College of Veterinary Surgeons twenty-two years ago. Dr. Boor in his letter of transmittal also says: "Dr. J. L. Axby, Lawrenceburg, Ind., and Dr. W. Axby, Harrison, brothers, were elected mayors of their respective towns at election last fall. Now that is going some for brothers, and veterinarians at that. The standing of veterinarians has changed materially in this section during the last twenty years."

DR. HERBERT R. GROOME, of Jewell City, Kansas, has appropriated one of the jewels of that place, in the person of Miss Maude McClain, with whom he was united in marriage on March 19, 1910. We wish the newly wedded couple all the joy that such a state can bring them.

IN renewing his subscription to the *AMERICAN VETERINARY REVIEW*, Dr. T. C. Miller, of Port of Walhalla, N. D., says of it: "To me it is the center of gravity of the veterinary profession and the zenith of practical and scientific instructiveness."

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

CONGENITAL MALFORMATIONS OF EXTERNAL FEMALE GENITAL ORGANS [*F. C. O'Rorke, A.V.C.*].—These were presented to the author as being cases of hermaphrodite.

Case I.—Aged mare had a vulva well developed, normal in size and shape, but half an inch below the inferior commissure and a little to the left, there is a circular orifice, within which and slightly protruding, there is a small pigmented body covered with mucous membrane. This orifice communicates above with the vulva, and from the vulvar side, by external pressure, this small pigmented body could be made to protrude at the inferior commissure. This must have been considered as a penis, while it was but an hypertrophied clitoris. This mare was continuously “horsing,” and frequently when making water a few drops of urine would escape from the lower opening.

Case II.—A seven-year-old mule, when passing by any one, walking, would at first sight be taken for a gelding. The vulva is a vertical slit, half or three quarters of an inch long and almost completely hidden under the anus. The labia are undeveloped. The clitoris is not bigger than a pea. The mule was very docile and in no way disturbed by her infirmity.—(*Journ. Compa. Patho. and Therap.*)

MULTIPLE LIPOMATA OF THE PERITONEUM IN OX [*A. M. Trotter, M.R.C.V.S.*].—This found at post mortem: The cow had her uterus removed. The os uteri having remained patent, the peritoneal cavity was in direct communication with the vagina. If, as some say, lipomata are caused by irritation, in this case it may be considered as probable that the irritant had gained

access to the peritoneal cavity through the os uteri. The peritoneum, specially on the left flank, was studded with nodules, white in color and of various sizes. They were attached with long pedicles. After rigor mortis had set in, most of them were soft, tough, not elastic, somewhat translucent, while others were firm and hard. Their surface was uneven and their inside divided into compartments. - On section, they were composed of white material with areas of fat, normal in appearance and similar to ordinary adipose tissue. Similar nodules existed on the stomach, liver, spleen, kidneys, omentum, mesentery, intestines and bladder. They were all lipomata.—(*Ibidem.*)

ROUND CELLED SARCOMA IN A MARE. [*F. W. Cox, F.R.C.V.S.*].—This was the illustrated record of a bay mare, nine years old, which after some twelve months of good service developed over the body small tumor-like growths. These were on the face, neck, trunk and extremities. They kept on growing larger and also in number. Some smaller appeared later. Others were quite big. Sir John McFadyean examined them under the microscope and classified them among the round-celled sarcoma. In this animal the condition seemed to have been entirely involving the skin only, as at the post mortem no lesions were found internally.—(*Veter. Record.*)

PRELIMINARY NOTE UPON THE NEW OPERATION FOR ROARING IN HORSES [*Prof. F. Hobday, F.R.C.V.S.*].—Record of the so far successful results obtained in four cases of roarers, two of which were operated by Prof. W. L. Williams, of Cornell University, during his last trip to Europe. The horses will be closely watched and critically examined to see and report if the improvement, so far obtained, is or is not permanent. The operation made through an incision of the crico-thyroid ligament, after division is made of the cricoid cartilage, is described as follows: "A specially shaped retractor is now introduced and the two cut edges of the larynx held well apart, so that the interior of the larynx can readily be viewed. With a long specially made tenaculum forceps, the mucous membrane lining the interior of the larynx is grasped and pulled tense, whilst an incision is made behind it with a long double-edged razor-bladed scalpel. This incision is continued until the whole of the mucous membrane lining the ventricle has been incised, or, if the operator prefers it, can be separated with the handle of the scalpel, some blunt in-

strument or even with the fingers. The interior of the larynx is then swabbed with sterile wadding tampons, and the patient allowed to come out of anesthesia.—(*Veter. Journ.*)

CERVICAL TUBERCULOSIS AND FRACTURE OF FIRST RIB IN A MARE (*C. Pack, M.R.C.V.S.*).—Aged six years, a mare used for carting, was attended for abortion. A year after she was found scarcely able to move, the muscles of the neck and fore-arm being tender and stiff. Temperature 104.1° F., pulse 70. She moves as a laminitic horse. She is unable to lower her head. Acute rheumatism is suspected and treatment prescribed accordingly. A case of tubercular otitis was then observed by the owner; and fearing that the mare might have it also, tuberculin test was proposed but declined by the owner. There was some improvement after the mare had been kept in slings for a while and had been well fed. She was then taken out and let loose in a lane, where one day she became suddenly very lame after making a bad stumble. Finally she had dropped elbow badly and with a diagnosis of fracture of the first rib with doubtful results, the owner ordered her to be destroyed. At the post mortem, the fracture was detected. Both front ribs and some cervical vertebræ being taken from the carcass in one piece and being boiled, the two last cervical and first dorsal vertebræ were found ankylosed and as well as the two ribs diseased with osteitis. No examination of the internal organs could be made.—(*Veter. Journ.*)

TUMOR OF ONE HORN CORE IN A HEIFER [*Same author*].—Two-year-old heifer had one horn much more developed than the other. The left one was normal in appearance except in size and being very thick at its base. The cow was in good health, had calved and was a good milker. The extra length of that horn was a decided inconvenience to her in her stall. One day a blood vessel burst in the poll and threatening hemorrhage occurred. It had left a ragged wound at the base of the horn and pulsations of a fairly large artery could be readily seen. Properly dressed, all went well for a time, but another hemorrhage took place and the animal bled to death. The horn core was found very much enlarged and hollowed with cavities. The circumference of the diseased horn at the widest part measured 16 inches and the length along the greatest curvature was 22 inches. The healthy horn measured 6 inches at its widest circumference and 10 in its greatest curvature.—(*Ibidem.*)

SULPHUR POISONING IN HORSE [*H. W. Percy, M.R.C.V.S.*].—Several horses were reported ill on a farm. One has died. The history was that sulphur had been given to them to put them in good condition. One ounce, it was said, but probably eight by more careful investigations. Symptoms: great pains, pulse weak, quick and easily compressible. Temperature 104° F. Quick respiration, quivering of muscles, difficult swallowing, soft feces, like clay, urine acid and high color. Diarrhoea followed. The treatment: castor oil, eggs and milk, chlorodyne alcoholic stimulants. All the animals got well. At the post mortem of the one that had died there was high inflammation of the stomach and intestines which contained sulphur powder mixed with the food.—(*Veter. Journ.*)

A MUMMIFIED FOETUS [*D. Forwell, M.R.C.V.S.*].—Cow was put to the bull on November 5, 1908. On October 8, 1909, she shows a piece of putrid placental membrane hanging from the vagina. Vaginal examination is negative and she is supposed to have slipped her calf somewhere. The placental piece was removed. On the 10th of November she is again discharging filthy matters from the vagina. Antiseptic injections are prescribed. On the 13th she has another spell. There is a small hard mass protruding from the vagina. It is pulled away from her and proved to be a calf about the size of a fox terrier. There was no hair or skin and very little flesh on it. The skeleton was more or less shriveled and partly "calcified." The cow had carried her progeniture about three months or more later than she ought to.—(*Ibidem.*)

IMPERFORATED ANUS IN A CALF [*P. S. Munshi, G.B.V.C.*].—A cow delivered a calf with imperforated anus. The little fellow is taken to an empiric who operates on the wrong place. Three days after the calf is in somewhat comatose condition. The wrongly operated part is sutured and an opening is made by the author in the right place. Fecal matters are extracted with warm water enemas. Recovery follows.—(*Ibidem.*)

UNCOMMON SEQUEL TO A FRACTURED PELVIS [*Hy. Gray, M.R.C.V.S.*].—Red pomeranian run over, has a fracture of the pelvis. Treated and discharged. Some seven weeks after he had some little ailments for which he was treated and got relief. But two months later he is taken with frequent repeated vomiting and

dies two days after. At the post mortem, a pint of greenish yellow fluid was found in the abdomen. There was a small perforation in the small intestine and an inch or so further on the bowel was twisted and a knuckle of it appeared herniated in a pouch to which it firmly adhered. On careful dissection it was found that "the fracture had involved the pubis of the left side, which was broken in two places with a small piece of bone loose between them and also the neck of the ilium, which was broken across. A loop of the small intestine near the junction of the large and small intestine had become adherent in the pelvis to the fracture of the ilium which had penetrated and lacerated the parietal peritoneum locally. The inguinal canal was normal and free from bowel."—(*Veter. News.*)

VESICAL CALCULUS.—A photograph* shows the size of the stone, which measured six and three-quarter inches in circumference and was the full size of a hen's egg. Stones as large and even larger are on record as having been found at post mortem, but the interest in this case lays in the fact that it was passed through the urethra of a horse.—(*Veter. Record.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

RADICAL TREATMENT OF A DOUBLE INGUINAL HERNIA IN A FOUR WEEKS' COLT [*Dr. Fontaene, Army Veterinarian*].—This congenital hernia is, on the right side, as big as a child's head, and as a man's fist on the left. When the animal is standing, the tumor looks like a big mass which gets gradually larger. Spontaneous recovery is not to be expected and an operation must be performed. For the right side, it consisted first in incision of the scrotum and exposure of the hernial sac. The contents of the hernia are readily reduced in the abdominal cavity except what constitute the genital external apparatus. A temporary cat gut ligature is placed around the cord well up. The

*Photograph was not received by REVIEW.

sac is opened and the testicle and its annexes are exposed. At that moment a loop of the boating colon slips by the temporary ligature and comes out. It is easily replaced and the testicular cord with the envelops are taken hold of with a metallic nipper above the temporary ligature. The testicle is then removed with limited torsion. The stump of the cord is pushed in the abdomen. The temporary ligature is taken off and the hernial sac is closed tight with a bleeding knot firmly secured. The protruding portion of the sac was then amputated, the inguinal ring was closed with sutures and also the skin. Similar manipulations were carried out for the left side. The stitches of the skin came off in eight days and recovery went on without any unusual event.—(*Bullet. Socie. Cent.*)

PERINEAL HEMATOMA LOOKING LIKE A VESICAL HERNIA [*Dr. Roussel*].—St. Bernard slut has had puppies. Two days after she makes violent useless efforts to micturate. In the perineal region, there is to the right of the ano-vulvar fold a tumor of the size of a small orange. It is hard and painful. The pulse is 140. The temperature 37.3° and the breath has a strong ammoniacal odor. Palpation and auscultation of the abdomen give the sensation of fluid and when the tumor is examined by vagina, it seems hard and crepitating. By catheterism of the bladder, about 10 litres of dark ammoniacal urine are extracted. When the bladder is empty the tumor has still remained. Exploration with a fine trocar, made through the vagina is negative. The tumor must be excised. After disinfection, the skin and the transverse muscles of the perineum are incised and an hematoma pressing upon the urethra is exposed. Curettage, drainage of the wound, muscular and cutaneous sutures, recovery in ten days.—(*Ibidem.*)

INGUINAL EVENTRATION IN AN ADULT GELDING—RADICAL OPERATION—RECOVERY [*Dr. Fontaine, Army Veterinarian*].—Nine years old, this horse makes a somersault, falls backwards. He rises without trouble and walks 8 kilometers carrying his rider. Three hours after, it is noticed that he has in the right groin a large swelling, about the size of a boy's head, with diffuse surroundings and easily reduced by taxis. It returns as soon as the pressure is stopped. There is no colic, the tumor is not painful. The diagnosis is evident and an immediate surgical interference is decided. The horse is etherized and the following

steps carried out: 1. Reduction by taxis; 2. Thorough disinfection of the region, free incision of the skin on the most prominent point of the tumor, laceration of the connective tissue and exposure of the opening of exit of the viscera, viz., a rupture of the small oblique muscle of the abdomen and of the peritoneum about where the puncture of the abdomen is made in abdominal cryptorchid by the Danish method. 3. The edges of the oblique muscle are brought together with cat gut. A second suture closes the external inguinal opening and a third brings the borders of the cutaneous incision closed tight together. Complete recovery in 20 days.—(*Bullet. Soc. Cent.*)

CHRONIC BURSITIS (HYGROMA) OF THE WITHERS [*Dr. Fontaine and Prof. Rayssiguier, Army Veterinarians*].—Eight-year-old draught horse had on the summit of the withers a soft tumor, size of child's head, fluctuating, almost painless, bilateral and without inflammatory manifestations. An exploring trocar is thrust in it and a limpid liquid, synovial-like, establishes the diagnosis of bursitis. Repeated capillary punctures were tried first, but gave no good results. The collection returned every time. An incision was made of the top of the tumor and one at its base and a drain tube inserted. The animal rubbed himself and a beautiful fistulous withers is established with abundant suppuration, warm and painful œdematous swelling, lymphatic cords, etc. Free incision of the fistulæ is made, curettage and drainage tubes are inserted. Everything seemed to go on well for a while, but yet after six weeks of treatment, there is a spot on the top of the withers on the apex of the dorsal vertebrae where the skin remains loose and the cavity of the hygroma remains. A crucial incision is then made which allows a full view of the bottom of the hygroma, which is dressed as a single wound. After two weeks the horse finally returns to his work. The authors acknowledge that they finish the treatment by what they ought to have began.—(*Rev. Gener. Medec. Veter.*)

TESTING THE TREATMENT BY BIER'S METHOD [*A. and R. Lasserre, Army Veterinarians*].—In France, this method is not frequently resorted to. At least records are few. The authors have decided to test it. They used sometimes the band of Es-march or again a single cord, which they applied between the lesion and the heart, repeating the application during three or four consecutive days and then stopping for twenty-four or forty-

eight hours. They record two cases of suppurative tendinous synovitis of the hock, which were both successfully treated and where both animals resumed work in short time, taking in consideration the severity of the cases. The authors record also the results they have obtained in treating acute lymphangitis, appreciating the results principally in measuring the perimeter of the extremities at the hock and the fetlocks. Five cases of lymphangitis were submitted to Bier's treatment. The results somewhat good, were not as satisfactory as in the two other cases, and another animal treated in the ordinary method of treatment showed as much and as rapid improvement as by Bier's compression. In a last subject suffering with sub-glossal abscess, the results were doubtful. The conclusion of the authors are that the treatment gave truly valuable results in suppurative inflammation and open injuries.—(*Rev. Veter.*)

UTERINE AND VAGINAL CYSTS [*Vidal, Jr.*].—These may be the cause of the violent expulsive efforts often observed in pregnant females or after parturition. In one case it was a pregnant Norman cow. She makes violent efforts. She aborts. In removing the envelops, Mr. Vidal feels a smooth fluctuating tumor, painless and as big as the two fists of a man. It is attached in the right horn. Opened with a lancet, it gives escape to serous yellow, thready and odorless fluid. No further efforts from the cow.

In another aged cow, she has calved, but since a few days after, she continuously makes violent strains. There is a partial prolapsus of the vagina. On examination, there is found across the congested urinary meatus an elongated tumor about the size of a beer bottle. It is narrow at its base and hangs from the left lateral face of the vagina. It is smooth, painless and fluctuating. Punctured, it is emptied of its contents, viz., a liquid similar to that of the first case. Boric acid cleaning. The straining subsided at once. Cow is in perfect health.—(*Ibidem.*)

NOTES UPON SOME CASES OF LAMINITIS OBSERVED IN OSTEO-MALACIC HORSES [*Mr. Guilhem, Army Veterinarian*].—Case 1. Grey colt of 4 years is taken with laminitis of the four feet. Recovery in ten days. Three weeks after he has developed all the ordinary lesions of osteomalacia. One day he is unable to get up with fracture of the third lumbar vertebræ. Post mortem: Ordinary lesions of osteomalacia.

Case 2.—Aged gelding, has never shown symptoms of osteomalacia, and is found one morning suffering with laminitis of the

four feet. Treated, he recovers in fourteen days. A month and half after appear the chronic symptoms of osteomalacia.

Case 3.—Five-year-old stallion has presented the same laminitic condition. He is treated and partial recovery is followed by chronic osteomalacia with enlargement of the bones of the face and maxillaries.

Case 4.—This mare has already chronic lesions of osteomalacia. She takes laminitis of the four feet. One morning she makes a misstep and in the efforts trying to avoid a fall, the tendinous insertion of the flexor metatarsi muscle gives away. At post mortem the bones are found all diseased.

Case 5.—Gelding has osteomalacia, then laminitis follows.

Case 6.—Another gelding very diseased with osteomalacia also gets laminitis.

Referring to the opinion advanced of the toxi-infectious nature of laminitis as advanced by Prof. Sendrail, it has seemed to the author that these notes were confirmative of this theory.—(*Rev. Veterin.*)

DIFFUSE OSTEO-PERIOSTITIS IN A DOG—VISCERAL TUBERCULOSIS [*L. Auger*].—Also known as osteoperiostitis or osteitis deformans, this affection has been rarely recorded. This is the second case mentioned as having presented besides lesions of visceral tuberculosis. The subject was a slut, aged 18 months, which presented difficulty of locomotion and had swelling of the extremities since about six months. She was in a somewhat satisfactory condition of health, had good appetite, but her legs appeared to be held further apart than normal. She walked stiff, yet without great pain, and the lower extremity of the radius and cubitis, the carpus, external metacarpal bones, the tarsus and the metatarsals have an abnormal size. The diseased parts are not painful to pressure. Percussion of the chest gave no evident results, but auscultation revealed crepitating rales in the lungs. No glandular hypertrophy. Tuberculin test gave negative information. After being kept awhile under observation, the slut was destroyed. Post mortem—In the abdomen: Liver slightly congested, kidneys, spleen, stomach, intestines and bladder normal. Mesenteric and sublumbar lymphatic glands are hypertrophied and caseous. The lungs have centers of broncho-pneumonia with caverns. Pleura is covered with grey, hard granulations. Lymphatic glands also hypertrophied. The surface of the bones, especially those of the extremities, is covered with osteophytes surrounded with thick

fibrous periosteum. There is dry arthritis with ankylosis round the carpus and the tarsus. Researches for bacilli demonstrated that there was a true visceral tuberculosis. After maceration it was observed that the bones of the head and trunk were free from osteophytes. There were a few in the caudal vertebræ, none in the superior portion of the bones, but there were a few on the patella, the radius and the cubitus. The carpus was entirely ankylosed and also the tarsal bones. The phalanges were comparatively free.—(*Jour. de Zootech.*)

PARTIAL RUPTURE OF THE GASTROCNEMIUS MUSCLE IN A DOG [*Prof. P. Leblanc*].—Rupture of the Tendo Achillis is more frequent in the dog than that of the bifemoro-calcaneus muscle. This is one case. Hunting dog chasing game had become suddenly lame on three legs. The author saw him only fifteen days after. At first sight, the case looks as one of rupture of the tendon Achillis. The hock is dropped and the dog puts his weight on the posterior face of the metatarsal region. The femoro-tibial joint is in great extension. The dog moves slowly and the lameness increases, when the walking is fast or the animal runs. The cord of the hock is quite thickened; twice its normal size, but yet has not the knotty or deformed aspect met in cases of rupture. In exploring the muscular proper part, a regular notch is felt a little above the origin of the tendon. This notch involves half the thickness of the muscle. Its edges are indurated, and the space between it and the tendon is filled with a firm mass in which the muscular tissue is sclerosed. It is evident that there has been a partial muscular lesion. As the injury is three weeks old, no bandage is justifiable. Some improvement took place in time, but the dog remained permanently lame.—(*Journ. de Zootech.*)

THERAPEUTIC VALUE OF CRYSTALLIZED BORIC ACID [*Fayet and Goudou, Army Veterinarians*].—A 13-year-old mare received a kick on the inside of the left hock. She is very lame and is in great pain. Blister is applied. The animal grows worse rapidly and escape of synovia takes place. The flow is quite abundant and soon purulent. There is quite a large fistulous tract. After thorough disinfection of the region, several injections are made of a solution of sublimate to the one thousandth, and then the fistulous tract is packed with crystallized boric acid pushed in with hydrophile wadding. This first dressing was

changed in the evening. The next day the flow of synovia is less abundant. The animal rests his foot on the ground. Boric acid is again introduced. On the second day there is such improvement that the animal is left alone. On the fifth day the escape of synovia has entirely stopped and as the improvement becomes more and more marked, the animal is taken out of the slings, turned loose in a box, and finally resumes work eleven days after her injury.—(*Repertoire Veter.*)

TUBERCULAR PERDICARDITIS [*Mr. R. Pecherot*].—History—Since a month this eight-year-old mastiff has a large abdomen, he breathes with difficulty and while at rest remains in sitting position, in which at times suddenly he drops down on his fore legs and falls on the floor. He has lost much flesh lately. Symptoms—Abdomen large, principally in the lower portion. Flanks hollow; cardiac contractions not detected by percussion or auscultation; exploration of the thoracic cavity reveals on percussion a zone of dullness, bound above on the limits of the superior and middle third, backwards to the second rib and forward to the elbow joint. When the dog is in sitting position the dull zone seems to move backwards. Auscultation cannot detect the vesicular murmur in the dull zone. In the upper part of the chest, the respiration is increased and loud. The dog never takes the decubital position. He stands with the anterior legs far apart and elbows bent outwards. Exploring puncture of the pericardium gives escape to a large quantity of fluid. Microscopic examination and cysto-diagnosis prove the presence of tuberculous perdicarditis. Put under treatment of digitalis and diuretics the dog improves very slightly for a few days, but finally gets worse and is destroyed, after presenting the following interesting symptoms: Enormous swelling of all the extremities and of the lower part of the neck. His respiration became jerky, heart accelerated and intermittent; 160 pulsations. Great loss of flesh and yet good appetite; frequent micturition; venous pulse. Post mortem—Thorax: Collection of citrine and yellow fluid similar to that taken from the pericardium; pleura covered with tuberculous granulations; lungs pushed upwards showed caseo-calcareous lesions of broncho-pneumonia; pericardium much enlarged and thickened is covered with tuberculous nodules; tracheo-bronchial lymphatic glands hypertrophied and with caseo-calcareous degeneration. The heart had valvular lesions also. Abdomen—Stomach dilated and full; intestines normal; liver enlarged and having

yellowish granulations of various sizes and in which small number of bacilli are detected. Kidneys are the seat of chronic tuberculous nephritis. Mediastine, mesenteric and lumbar lymphatic glands were also diseased.—(*Journ. de Zootech.*)

TENDINITIS OF THE TENDO ACHILLIS IN DOG [*A. Urbain, Army Veterinarian*].—Eight-year-old hunting slut while chasing a hare becomes very lame in the right hind leg. Carrying weight on that leg is painful; very much so, and when the dog moves she does it on three legs. At each step the right hind leg drops down and the metatarsal region touches the ground. There is no bruise nor rupture, but an elongated swelling as large as a small nut, which is situated two fingers width above the point of the hock. Involving the entire thickness of the cord, this swelling is warm, very painful on pressure. The case is one of tendinitis, a sprain of the tendo-achillis. Astringent applications of sulphate of iron were applied and followed by tincture of iodine. These did well, but it was necessary to resort to deep firing with fine points to obtain a complete and radical recovery.—(*Journ. de Zootech.*)

GERMAN REVIEW.

By JOHN P. O'LEARY, V.M.D.

CONCERNING THE ABSORBING POWER OF THE SKINS OF ANIMALS FOR SALICYLIC ACID AND ITS SODIUM SALTS [*Dr. George Schumacher*].—The results of his experiments are as follows: 1. Salicylic acid incorporated as an ointment or in alcoholic solution is absorbed through the intact skin of the horse, cow, dog and rabbit. 2. Natrium salicylicum is neither absorbed in ointment form, nor in alcoholic solution through the intact skin of the above-named animals. 3. The salicylic absorbed appears in the urine on an average two hours after its application, when it is incorporated with adeps suillus and lanoline applied as a salve or in alcoholic solution. 4. Traces of salicylic acid are found in the urine on the second day after being applied in the form of an ointment. 5. When salicylic acid is applied to the skin in alco-

holic solution, its elimination from the system is much more rapid. 6. The smallest quantity of salicylic acid found in the urine when applied by friction in ointment form is as follows: In rabbits, 0.2; in dogs, 0.3; in cattle, 0.3; in horses, 0.5 gm. In alcoholic solution: Dogs, 0.15; cattle, 0.15; horses, 0.5 gm.—(*Berliner Tier. Wochenschrift*, No. 20, 1909.)

CONTRIBUTION TO THE STUDY OF ANJESZKY'S DISEASE [*Dr. F. Kern, in Krizerci*].—This disease is also known under the name of paralysis bulbaris infectuosa. It is not mentioned in foreign literature, although not at all rare in Hungary and Croatia. More than probable the disease exists in other countries and in consequence of its very acute nature it is not brought to the attention of veterinarians or perhaps it is not accurately diagnosed. The author called attention to several cases of this disease which were observed in Croatia. Besides four isolated cases in dogs and one in cattle, the disease appeared in epizootic form on a farm. In the course of four days, three cattle, two dogs and a cat fell victims to the malady. In all cases the most striking symptom was a very intense itchiness of a circumscribed portion of the skin (usually on the head), the part being rubbed or scratched to the extent that it became a raw bleeding surface. The results of the post-mortem examinations were negative in every case: the diagnosis being verified by animal inoculation. The experiment animals, which were inoculated with an emulsion of the brain substance of the affected animals either subcutaneously, intra-ocular or subdural, died with the same typical symptom of the disease; the incubation period extending at most to the eighth day. A remarkable incident occurred in one case; a reinoculation had been made in the third series, the animal died without ante-mortem symptoms of the disease. Anjeszky had already a similar experience while experimenting with mice. With regard to natural infection the author is inclined to accept the part played by some of the blood-sucking insects; the more so, because the infecting material is present in the blood and because artificial infection of the skin is easily brought about.—(*Korleminyck ar Osszchasonlito élet-éskortan Noreböl*, 1909, VIII. S. 108.)

INVESTIGATIONS CONCERNING THE HAEMORRHAGIC INFARCTS IN BEEF LIVERS [*Chaussè*].—Although Stubbe, Kitt, Saake, Jäger, Stroh and others in Germany had described this

liver affection which is frequently found in food producing animals, Chaussè took up the work and investigated the disease both macroscopically and microscopically and also as to its etiology. He found no vegetable or animal parasites which could be ascribed as a cause. From his investigations Chaussè draws the following conclusions: 1. This liver affection is quite a common occurrence in cows; it is rare in oxen and not seen in calves or other animals. 2. Its etiology is still unknown. 3. The origin of this disease is to be found in the ramifications of the portal vein, from whence toxic or other microbic influences act deleteriously upon the liver capillaries. 4. Only those livers which are badly affected are to be excluded for edible purposes, otherwise they may be consumed without danger.—(*Deutsche Tier. Wochenschrift*, No. 22, 1909.)

A CASE OF GENERALIZED TUBERCULOSIS IN THE HORSE [*Perrèt and Joseph*].—A three-year-old horse which the owner purchased when eight months old and which had never been sick was heard to cough. The attack of coughing came rather suddenly and became persistent; it was of a dry nature. Pulse, 50; respiration, 15; temperature, 39° C. The eyes looked bright and clear; no discharges; lack of appetite; auscultation and percussion negative; appetite still poor. After a course of treatment lasting eight days the coughing ceased. Six weeks later the horse began to emaciate rapidly, the appetite being almost lost. At this stage it was not possible to determine the character of the disease. Three weeks later the cough returned; at this stage the latter was of a hacking nature and dry. Still no discharges visible. The conjunctiva slightly reddened; temperature, 39.5° C.; pulse, small and thready, 52 per minute; heart action, weak. Fourteen days later constipation set in. The region of the loins became stiff and the back arched. The temperature now registered 38.5° C. Two weeks later diarrhœa followed, accompanied by painful micturition and abdominal tenderness; temperature, 38.7° C. The urine was yellow and thickish and contained albumen; white blood corpuscles and epithelium. On the same day the general condition of the horse became alarming, when dyspnoea appeared; the body being bathed in perspiration, the eyes began to droop, the facial expression anxious; an almost imperceptible pulse; groaning; deglutition impeded; milk being the only food the animal would take and even that was returned again through the nose and mouth. The horse died two days later. The following le-

sions were found on post mortem: On the interior surface of the pericardium grape-like tubercles were found, but no fluid exudate. Heart normal. The pleura resembled the pericardium, the right thicker than the left. In the lungs numerous tubercles were present, but no caverns. The bronchial and mediastinal glands were enormously enlarged and interspersed with gray tubercles. The abnormally large lymph glands compressed the œsophagus to the extent that swallowing was impossible. The mucous membrane of the bronchi and trachea were somewhat inflamed. The peritoneum was normal. The spleen contained innumerable tubercles. The liver was somewhat contracted; mesenteric glands similar to the bronchial glands. In the kidneys a few tubercles were found in the cortical substance. In all diseased parts enormous quantities of tubercle bacilli were present.—(*Deutsche Tier. Wochenschrift*, No. 51, 1909.)

INVESTIGATIONS CONCERNING THE CONTROL OF INFLUENZA IN THE HORSE [*Dr. Ostertag*].—Without a knowledge of the cause of influenza we cannot intelligently render an opinion concerning it, although perhaps under particular circumstances a control of the disease may be effected successfully by means of serum injections. Ostertag, therefore, undertook to determine the cause of the disease. The question arose as to whether the blood serum of horses which had recovered from an attack of influenza possessed immunizing properties. This was also investigated by the author. Blood from infected horses was obtained in large quantities and the serum employed for experimental purposes. The following are the results obtained: 1. In the nasal discharges of horses suffering from influenza and in the nasal secretions of healthy horses, various species of bacteria are present; among which are to be found pus producing streptococci. 2. In the expired air, in the bronchial mucus, in the blood of the jugular vein, and in the pulmonary blood of such infected horses which have recovered, bacteria are not discernible with the aid of the microscopes now in use. 3. On the contrary, in the thoracic organs and in some instances in the blood of horses which have died, showing symptoms of influenza and pleuritis, streptococci are present which resemble in their behavior the streptococci of suppuration. 4. It was not possible to transmit the disease to healthy horses by means of the nasal discharges, the expired air, the pleural exudate, the urine and blood of infected horses, nor from stable material where influenza had been prevalent and in

which many horses had been affected. Neither was it possible to establish the fact which of these agents transmitted the infecting material of influenza to the horses used for experimental purposes at the time the investigations were in progress. 5. It was also impossible to induce healthy horses to contract influenza with inoculations of the Schütz streptococci and Lignieres cocci bacteria.—(*Zeitschrift für Infectkrank. parasitar Krank. und Hygiene der Haustiere*, Bd. 5, H. 314.)

ACQUIRED DIAPHRAGMATIC HERNIA IN A FOAL [*S. László*].—A two-and-one-half-year-old foal which was kicked by a horse in the region of the right shoulder, resulting in the fracture of a rib. After the lapse of four days the foal showed symptoms of colic, dying six hours later. At the post-mortem examination it was discovered that a prolapse and incarceration of the intestines occurred in the thoracic cavity by means of a rent in the diaphragm, the latter being perforated by the broken pointed end of the sixth rib.—(*Allatorvosi Lapok*, 1909, No. 31, S. 373.)

GASTROINTESTINAL WORMS IN A HORSE, PRODUCING NERVOUS SYMPTOMS [*S. László*].—Nervous symptoms somewhat resembling those of rabies were observed in a poorly nourished horse. The animal was aggressive in manner to persons who approached him, biting himself around the chest and fore legs, even lacerating himself, accelerated respiration, frequent evacuation of the bowels. On the second day the animal lay down and was unable to rise again. Death occurred on the third day. Notwithstanding the similarity of this disease to rabies, the author was of the opinion that the symptoms indicated parasitic infestation (gastro-philus larvæ or ascaris magalocephala) in the stomach, or in the intestines. Experiment animals inoculated with an emulsion of the brain substance of the horse remained healthy. However, the length of time the experiment animals were under observation had not been stated.—(*Allatorvosi Lapok*, 1909, No. 32, S. 390.)

PARALYSIS BULBARIS INFECTIOSA IN THE DOG [*St. Laufer*].—On an estate and within the short space of two days three dogs became sick. The symptoms were as follows: Slavering at the mouth, scratching the head and neighboring parts. The animals died toward the close of the first day's sickness. At the post mortem no organic changes were visible. Rabbits inoculated

with portions of the medulla oblongata of one of the dogs showed after two and a-half days the same typical symptoms. A cat which was fed with a piece of the flesh of one of the rabbits in question was found dead on the ninth day. The author had also observed two extensive epizootics of this disease in dogs, at which time from four to five animals died daily.—(*Allatorvosi Lapok*, 1909, No. 36, S. 437.)

CONCERNING AN ELECTIVE STAINING OF THE SPORES OF ACID FAST BACILLI [*L. Betegh*].—The unstained portions of the tubercle bacilli which resist the ordinary methods of staining, and considered as spores by the author, may be stained according to the following procedure: The usual preparatory procedure is carried out with regard to the cover-glass preparation, then basic staining with carbol-fuchsin with moderate heating, then rinsed in water, subsequent staining with dahlia solution, according to Betegh, for 1-2 minutes, rinsing, differentiating with iod-iodpotassium solution (1:2:300) for a few seconds and afterwards in 96 per cent. alcohol or alcohol-aceton (1:2) until cloudiness disappears, then rinsing and drying. The plasma and the capsule of the bacilli appear blood red; the spores are stained black.—(*Közlemenyek az összehasonlító élet-es kortan Köréből*, 1909, VIII., S. 120.)

JASPER JAY "ALSO RAN."

At the recent convention of the Amateur Driving Clubs, at the Hoffman House, in New York, J. D. Callary, a Pittsburg delegate, told a story about a welcher.

"A bookmaker named Jasper Jay," he said, "was badly hit in a certain handicap, and, when Maid Marian won, he found he could not meet his obligations. So he decamped.

"Before decamping Jasper Jay posted this notice before his stand:

"SMITHVILLE HANDICAP.

"Maid Marian, first.

"John L., second.

"Diamond Dick, third.

"P. S.—Jasper Jay also ran."—*Rider and Driver*.

In five months from the date of this issue of the REVIEW, we will be "on the road to 'Frisko."

SOCIETY MEETINGS.

UNITED STATES LIVE STOCK SANITARY ASSOCIATION.*

At the Thirteenth Annual Meeting of the Interstate Association of Live Stock Sanitary Boards, held at Chicago, September 13 to September 15, the address of welcome was made by Hon. Phil. S. Haner, Chairman of the Live Stock Commissioners of the state of Illinois, who told the Association that they would be given an opportunity to see the extent and magnitude of Illinois live stock operations by visiting the yards, which cover five hundred acres, the 13,000 pens, 300 miles of railroad, and the thoroughly sanitary equipment. He mentioned the total receipts of the last year, same being \$306,566.518. Mr. Haner expressed the hope that the meeting would prove productive of great results in systematizing the work along lines of sanitation, the control of contagious diseases among live stock, and of closer co-operation between live stock sanitary boards; he mentioned the valuable state legislation secured in the last two years, which is only a beginning, and suggested the improvement that might be added to this by uniform state laws regulating interstate traffic in diseased animals; that where control measures are wanting, tuberculosis is on the increase among live stock, and that it was estimated that bovine tuberculosis costs the farms and stockmen of the United States not less than \$15,000,000 per year, and this loss would increase unless some reasonable and universal action is taken. He also told of the plans of the Illinois Board of Live Stock Commissioners toward a modern biological laboratory for the production and free distribution of serum for use in hog cholera, tuberculosis and other diseases, under the direction of Dr. A. T. Peters.

The address was responded to by Dr. C. A. Cary, State Veterinarian of Alabama, who expressed the pleasure felt by the

* The REVIEW desires to acknowledge its indebtedness to Dr. A. S. Peters, chairman of the publication committee, and to Prof. J. J. Ferguson, secretary and treasurer, for the very complete summary of the September, 1909, meeting of the above association.

Association in being the guest of the Illinois Live Stock Sanitary Board and city of Chicago, and the belief that from such meetings as these great results would be achieved and the importance of veterinarians recognized.

Dr. Dalrymple, president of the association, in his address mentioned the increase in states represented in the association over last year which now number twenty-eight, while last year there were but seventeen, and he felt that a backward glance warranted congratulation to the association in the growth of interest and real substantial good done. He mentioned among the notable accomplishments the stupendous, but successful, task of exterminating contagious pleuro-pneumonia from the United States by the Bureau of Animal Industry of the United States Department of Agriculture; the victory over foot-and-mouth disease; the extermination of the cattle tick which will so soon be accomplished; and the very successful results in the investigations of hog cholera. But even with so much done, the work ahead is still of such large proportions that the same untiring American spirit of energy must be manifested. He touched upon the importance of the branch of government controlling sanitary conditions of live stock and mentioned the necessity for united effort toward the destruction of zymotic disease; the improbability of the layman familiarizing himself with all the agencies in the production of disease, as this would imply a life work in the investigation of the numerous contagious and infectious diseases of animals and a knowledge of the life histories of the various disease producing organisms and that this must be left to the scientific investigator in the field of bacteriology, to whom we are already so greatly indebted, although it is of great importance that the layman and stock owning public become acquainted with the more practical points demonstrated by scientists in connection with this class of disease, which can so easily be done through the excellent information to be obtained free from the National Department of Agriculture, Agricultural Experiment Stations, Farmers' Institutes and many other reputable agricultural journals; he also spoke of the danger from vendors of proprietary medicines; the "would-be benefactor" who is deceived into the belief that he has "hit" upon a specific which never failed and recommends it to his neighbors; and the professional fakir who neither knows nor cares what the disease is just so he sells his remedy; and thus no good being accomplished, the disease is permitted to spread, thus proving the need of education and accurate information.

Regarding those who have doubts as to the existence of germs because they cannot see them, Dr. Dalrymple spoke of the fatal results of the want of appreciation of the importance of sanitary measures and the permitting of the infected area to spread before the authorities learn of its existence; that more accurate information regarding laws of animal hygiene by owners of live stock, and their willingness to co-operate, would be a powerful agency for good in the prevention, control and eradication of some of the fatal animal plagues which interfere with national and international commerce in live stock; in short, a uniformity in live stock sanitary laws.

In the report of the Committee on Sanitary Laws and Regulations and the state officers of the various states, Dr. A. D. Melvin, of the Bureau of Animal Industry, chairman, stated that requests had been sent out to each state for literature relating to live stock sanitary affairs and from the information received, the remarkable advancement in tuberculosis legislation assumed prominence above all else. Relative to the need of legislation for assistance in the battle against this dread disease, Dr. Melvin said:

"From our standpoint one of the fundamental steps to be taken by a state in an intelligent effort to control any disease is to make provision to prevent the entrance of diseased animals from other states. The states having legislation which in general requires that the freedom from tuberculosis of all dairy or breeding cattle shall be determined by means of a tuberculin test applied within a short time prior to their entrance into the state or immediately thereafter, are thirty-one in number. In fourteen the requirements were made previous to 1909 * * *"

And he stated, further, that in the year 1909, in nine months seventeen states, a greater number than in the combined previous years, had created similar requirements. Six require tuberculin test on cattle admitted for exhibition purposes, and New Mexico makes a second test three months after admission.

Dr. Melvin in his paper on "Recent Outbreak of Foot and Mouth Disease" stated that it was first observed early in November, 1908, near Danville, Pa. All counties in which the disease was found to exist were quarantined November 12th and then cases being found in New York, both states were quarantined, and before the end of November, due to investigations made, fourteen counties in Pennsylvania, five in New York, one in Maryland and two in Michigan had been quarantined. Im-

mediately arrangements were made for co-operative work by federal and state authorities and a strict quarantine enforced. The force of trained veterinarians in the Bureau of Animal Industry and the live stock sanitary officials in the infected states made prompt and efficient action possible, thus demonstrating the importance and advantage of not having to delay the work until a force to deal with the outbreak could be organized, and the disease was confined to the areas infected. Every rumor of the disease was traced, the Bureau engaging 572 employees, and some idea of the tremendous amount of work involved in these inspections is shown by the fact that 108,683 visits were made; 1,565,699 animals inspected, including some re-inspections; 3,636 animals slaughtered. Two-thirds of the appraised valuation of the slaughtered animals were paid by the United States and one-third by the states. By December 19, within six weeks from the beginning of the work, all diseased and slaughtered animals had been buried.

In this work, even the inspectors took every precaution against spreading the disease by disinfecting their apparel and wearing rubber boots, gloves, hats and coats.

Special efforts were made to have all premises thoroughly and completely disinfected and on April 24, 1909, the quarantine was entirely removed.

The beginning of this infection was traced to Detroit to calves that had been used in propagating smallpox vaccine, it being considered probable that the vaccine was contaminated with the virus of foot and mouth disease and that this caused the outbreak. The United States Public Health and Marine Hospital Service of the Treasury Department was requested to join the Bureau of Animal Industry in a work of investigation to determine whether or not contaminated vaccine virus was the cause, and scientific methods showed that the smallpox vaccine virus was contaminated with foot and mouth disease. Detroit had obtained it from a firm in Pennsylvania in May, 1908, where it had probably been introduced with vaccine imported from Japan in 1902; the New England outbreak had originated from the same cause; although the investigations made at that time had not brought this fact to light. But the experiments after the Pennsylvania outbreak demonstrated that animals vaccinated with mixed virus show only lesions of cowpox or vaccina as a rule although the infectious principle of this disease remains in the vaccinal eruption; and in order to prevent these lesions from

being suppressed or obscured by those of vaccina, in some of the tests animals were used which had been vaccinated and were therefore immune to vaccina.

Immediate and effectual steps were then taken to destroy all contaminated vaccine virus from America. Prompt co-operation was met with from the firms handling it and soon all contaminated vaccine virus on the market was destroyed. Even manufacturers of vaccine virus for human use will be required to test their virus for the presence of foot and mouth infection and regulations have been issued by the Public Health and Marine Hospital Service to prevent the importation and sale in interstate traffic of vaccine virus contaminated with this disease. If similar control were given by law to the Secretary of Agriculture over biological products for use in human medicine, the danger of contagious diseases being brought in with preparations which are not regulated in this manner, would be greatly obviated.

The eradication of this disease cost the government almost \$300,000; the states over \$100,000. Besides the unestimated loss to dairy and stock raising industries and commerce, interstate and export trade were seriously interfered with.

Dr. Melvin also spoke in high terms of the co-operation met with from the railroads, who spent large sums of money disinfecting their premises.

In the discussion of Dr. Melvin's paper, Dr. Noack recommended the use of a carbolic acid solution over formaldehyde; stating it as his belief that the good results desired could be achieved without the affection to the mucous membrane of the mouth, and also the eyes, caused by the formaldehyde; to which Dr. Mohler replied that the results had been so satisfactory in the New England outbreak with the use of formaldehyde that they had unhesitatingly used in the second outbreak.

A paper on "Mange in Cattle" was read by Dr. Paul Juckniess, Deputy State Veterinarian, Lincoln, Nebraska. In defining this disease, Dr. Juckniess said:

"Cattle mange or itch is a specific disease of the skin and is caused by the mange parasite *Psoroptes Communis Varietas Bovis*. This causes inflammation and irritation of the epidermis, which is a characteristic symptom of the disease."

Symptoms by which it might be recognized was an intense itching with tossing of the head toward the infected places, usually the neck and shoulders. The greatest difficulties experienced in eradicating this disease were (1) lack of sufficient laws regu-

lating this disease; (2) lack of sufficient appropriation for securing competent men to handle the disease; (3) the stockmen resisting the enactment and enforcement of laws for stamping it out. These difficulties were being overcome by the co-operation of the government by which compulsory laws have been enacted and a uniform dip recommended and the appropriations which have made it possible for competent inspectors, familiar with mange in all its phases, to go out and assist in supervising the dipping, and stockmen have thus become familiar with the methods of dipping. On account of the rapidity with which it spreads it is important to detect it in the early stages. He believes that the best results are accomplished by having the dip hot 105 to 110 degrees F., as less damage is done by having it too hot than not hot enough, and seeing that the cattle are thoroughly immersed, holding them in from one to two minutes in order to soak the crusts and penetrate the hide, and then repeating the dipping in ten or twelve days in order to kill any mange mites hatched after the dipping. The strayers or cattle not dipped in the first roundup, should be watched for and the premises thoroughly cleaned and disinfected. In Nebraska the cattle are infected with lice as well as scab parasite and sulphur and tobacco is found to be efficient for both, and is very popular.

In treating the subject of tick eradication, Dr. Cary divided his subject into three parts: (1) The Method of Application, (2) Picking of Ticks, (3) Rotation. He stated that of the various dips, he had not found coal-tar dip very satisfactory; that, while arsenical dips were all right as far as the results were concerned, they might prove dangerous in the hands of ordinary men, and were really no more effective than oil preparations, the difficulty in the use of oil preparations being their variable composition and consequent various effects on the cattle and on the ticks. He believes that best results are achieved by dipping once a week. Picking is just as important as the use of dips in this eradication. In discussing rotation (having summer and winter pastures) he thought that the inspectors should keep in mind that different advice should be given not only in different states, but often in different sections of a state on account of the agricultural conditions; he should be able to tell the farmer something about the crops, how he can feed and pasture his cattle. And by working along the lines of least resistance, the opposing counties will soon be surrounded and will become anxious to have the work done there.

In the discussion several points of interest were brought out. Dr. Nighbert after a brief talk gave the following conclusions: that the ticks can be eradicated; that the greatest hindrances are the people who do not yet realize that the cattle tick has hurt them financially; the educational feature—time and persistency on the part of each individual engaged in the work are essential; and that drastic laws, federal and state, controlling the movement of quarantine cattle will accomplish a great deal.

Mention was also made of the lack of co-operation from men whose chief industry was along other lines than cattle, such as cotton, fruit, etc., who did not see the urgent need of eradication measures in their few head of cattle not appreciating that other and larger herds, whose owners made cattle raising their business, might become infected, and cause their owners great financial loss.

Dr. Ransom in his paper on "Arsenical Dips for Cattle Ticks" pursued the subject treated by Dr. Cary, stating that due to the risk attending the use of arsenic, the U. S. Department of Agriculture has never approved arsenical dips for sheep scab, and others less dangerous and more effective are preferred, such as tobacco, lime and sulphur, and coal-tar. Speaking comparatively of experiments made in different localities of solutions of arsenical mixtures, crude oil in soap emulsion with water, and a combination of the arsenical solution and oil emulsion, he said he had found results varied considerably, but in no case were all the ticks killed with one application of any of these dips, and in Texas the last was found most injurious. The arsenical mixture was less injurious than the oil emulsion. It was noted that the eggs laid by the ticks after dipping were fewer and a smaller proportion hatched than from eggs of undipped ticks.

These experiments proved that the arsenical dip, while useful where cattle need not be freed from ticks immediately, could not be substituted for oil where cattle are dipped previous to moving to a non-infected area. The oil dip not only destroys the ticks present at that time, but also protects against infection longer than arsenical dips.

Similar experiments made in Oklahoma proved the arsenical dip most successful, the oil emulsions a failure, coal-tar and creosote dips at double strength less effective than arsenical mixtures and more injurious to the skin.

In a laboratory experiment on ticks removed from cattle, some of those dipped in an arsenical mixture died without laying eggs;

some laid them several days later than the undipped ticks and many less. Two calves artificially infected were dipped and a third calf similarly infected was not dipped. Arsenical dip was used and the result showed the dipped animals laid fewer eggs and fewer hatched.

Discussion brought out the practicability of the hand spray as the inspector would then remove the large ticks, although for large herds the tank was preferable; the hopelessness of having the work done if the dip were put in the hands of the average owner; that ticks would not mature if treated every two weeks; that there was no danger to the cattle if the head went under and no loss of poultry; and the danger of driving the cattle too soon after dipping, ten days being a safe time.

Dr. Melvin reported on "Work of the Various States in Immunizing Against Hog Cholera," that eleven states have each appropriated over \$1,500 per annum for carrying out serum production; many are working without appropriations, but all report good results. Where failures have occurred in the treatment of hogs during the past year, it has not been due to the method but to low potency of the serum or the failure to give the required dose. Serum from immunized hogs is more of a protective substance than a cure and to do most good must be administered early in the outbreak. In speaking of the serum simultaneous method Dr. Melvin said: "In the case of the serum simultaneous inoculation, only carefully tested serum should be employed, and the herd should be kept under observation for two weeks after the treatment, so that the entire herd may be given serum alone if signs of illness follow vaccination." Referring to disinfectants for this disease he stated that carbolic acid in the presence of albuminous substances is not a satisfactory disinfectant for hog cholera, nor is bichloride of mercury. The disinfectant known as Cresolis Compositus is excellent. In closing, Dr. Melvin said:

"Looking over the work of the past year, we find no reason to believe that our previous results have been based upon error, but are rather more confident than ever that in this serum from hyperimmunized hogs, we have an agent which can be depended upon to protect hogs from hog cholera and which should serve as the basis for an energetic campaign looking to the eradication of hog cholera."

In the subject, "Control of Glanders," Dr. Schoenleber said it was necessary to consider in the control of any contagious dis-

ease three things: (1) The character of the contagium and special conditions favoring or retarding its development; (2) the origin of the disease and the methods in which it spreads; (3) the methods available in locating and limiting the disease. The sources of the disease of glanders are: Poor housing with lack of sunshine and fresh air; the grading gang, where the horses are in close contact and have little power of resistance due to overwork, and the drinking fountain. In the control of the disease, he recommended the abolition of the drinking fountain and watering trough; quarantine against importation of uninspected animals into the state, and destruction of all diseased animals.

In the application of mallein where there are no clinical symptoms three reactions may be looked for: systematic, thermal and local. If all three occur the diagnosis is easy, but it is scarcely reliable to condemn on one; that the first may be so slight that it is not observed, but means much in connection with the other reactions toward proving the case; a thermal reaction occurs independent of the presence of the disease, therefore cannot be relied on alone; and the local seems to be the most constant and reliable. An animal might have this disease for several years, infecting other animals all the time, but his own symptoms so slight that no precautions were taken.

In the discussion it was generally conceded that the abolishment of the public watering trough would be a good thing everywhere, and in many places it has been done. In St. Paul and Minneapolis faucets have been substituted and teamsters carry their own pails; in many cities the fountains with constant outflow as well as inflow have been adopted. Also that a moderately worked horse well fed and kept in good condition is less liable to develop the disease in a clinical form than a horse kept housed and breathing impure air. The disease may usually be detected by an unusual rise in temperature and all horses showing a rise of 104 should be destroyed.

Dr. Luckey, in his paper on "Progress of Tuberculosis Eradication Work in Missouri," told of a sanitarium erected there for its study and treatment; of the co-operation of the whole state that had been secured, the people facing it calmly and with determination; the provision made for cure or for comfort where no cure was possible; the passing of a "Vital Statistics Law," which makes possible full knowledge of the contagious diseases and the progress made in the eradication; of another

law providing for prompt disposition of tuberculous cattle, and thus removing danger from the human race. Men are now asking if the cow they are intending to buy is afflicted and the inhabitants of towns ask whether their milk and butter is from healthy cows.

Dr. Dyson in further pursuance of this subject stated that the cows seldom showed physical signs of the disease in its early stages and it was soon spread to other cows, with the milk of all being used right along and not until it was sold for meat, which was not while it was a good dairy cow, was it tested and then it was rejected as unfit for food. That the people will not use the product of cows showing signs of lumpy-jaw or abscesses, but in fact they were not nearly as dangerous to the human race.

The greatest opposition toward eradication comes from the owner of large herds, too ignorant to conceive the danger and those holding public office through those men who have no regard for public health. By offering an incentive to dairymen with large healthy herds to enlarge upon his product of wholesome milk, much good might be accomplished among dairymen.

Dr. Evans spoke of the close relationship existing between the veterinarian and public life. He pointed out the fact that the fight against tuberculosis was not only in the bovine world, but for child-life, and the improvement of factory conditions and tenements. He told of the many hospitals in the city of Chicago and in Cook county for those afflicted, especially those who were no longer able to care for themselves; and that the disease was not only prevalent in the tenements and poorer districts of the city, but from the better localities, in fact from all parts of a city, and every effort is being made to eradicate the disease; the charitable people and organizations and churches, subscribing to and maintaining hospitals.

The subject of "Nerve Irritation as a Factor in Tuberculosis Extermination," by Dr. C. G. Lamb, touched upon a new side of the question—that of teaching them the loss there would be to stockmen if they did not clean up their own herds, and by thus appealing to their pocket-books, bring about better results to man and beast. Less opposition would be met if the state or municipality would pay for the necessary test. This is the great work of the present century and the importance of saving the human family by eradicating the disease from food-producing animals cannot be overestimated. It is more state than national work, but the national government will render every possible as-

sistance. The people must be educated in regard to it and those most easily influenced by self-interest followed up. Make the movement, sale and use of all animals known or suspected to be diseased with tuberculosis as difficult as possible, and demonstrate to the owner that it is for his own benefit to remove suspicion from his herd and obtain a test.

Dr. Nelson in the "Proper Methods of Disposal of the Carcasses of Animals Dying from Contagious and Infectious Diseases" said that the disposal of these carcasses depended upon the facilities available for disposal and the disease. The question is simple in cities that have crematories, the precaution necessary in such cases being in regard to conveying the animal to the crematory. Where an animal is buried and there is danger of dogs digging up the carcasses, they should be covered with lime before the earth is thrown over them. Burning an animal on a straw stack where straw is not valuable is a favored mode of destruction in the West for diseased carcasses. Destruction by burning over trenches is a good method and where it is impossible to obtain wood, straw or other common fuel, sage-wood or greasewood is placed around the carcass which is slit open and saturated with kerosene.

Dr. Melvin spoke of the importance of this paper to farming districts in the West where proper disposal is not made and the disease is spread by dogs which have access to the carcasses. Dr. Lewis spoke of spreading by buzzards in Mississippi where carcasses are left exposed, and in this connection a resolution was offered for the repeal of laws making it a crime to kill buzzards. In some places carcasses are simply thrown into the river. It was suggested that where no fuel could be obtained, if iron or green wood pieces were placed over a trench and the animal laid thereon, slit so the fat would run over it, it would burn enough to destroy all danger of infection. The fact that germs would continue to live under ground and showing the virtue of quicklime, was suggested.

Dr. Mayo on "Sanitary Work in Cuba" was especially interesting, pointing out the intimate political and economic relations existing between the United States and Cuba and their constant growth, making it advisable for the sanitary conditions of Cuba to be considered by the United States. He said that while they have an abundance of laws, they were not enforced, and they needed revision and simplification, although a situation could usually be controlled by some measure. An effort had been made to

gain the confidence of the farmers and stockmen by proving to them that they could really help them, and to educate them along the correct lines, but this had been slow work for a number of reasons, some of them could not read; their breadth of view is smaller than we are accustomed to, and their spirit of procrastination. Dr. Mayo called attention to the fact that he spoke of these, not as faults, but as important differences between the two countries. That the fact that he was a foreigner had been more of a help than a hindrance, as they were aware of the attitude of the United States government toward them and the work of the American army had inspired confidence. The cattle industry had practically been destroyed in 1895-98, and in the heavy importation following the war no attention was paid to sanitary rules, and it is remarkable that only one serious disease seems to have been imported—that of blackleg—which was not known to exist in Cuba previous to the war. Careful watch is kept for the presence of any transmissible disease due to blood parasites, but none have been found so far. A laboratory has been established under the supervision of the National Sanitary Department for the manufacture and distribution of anthrax and blackleg vaccine. As a result of circulars sent out regarding these diseases, the use of these vaccines is general, and the results obtained excellent. Vaccine is sent free to all stock owners requesting it. Live stock in Cuba suffers severely from attacks of parasites, ticks, screw worms; intestinal parasites are common, and the tick is the greatest pest. They are using arsenical solution recommended by the Department of Animal Industry.

Dr. Mohler on "Veterinary Tetanus Antitoxin with Special Reference to Federal Supervision of Biological Products."

"Of the various biological products prepared for the cure and prevention of infectious diseases, tetanus antitoxin has probably been most extensively used by the veterinary profession."

However, Dr. Mohler states, the divergent results obtained by various practitioners have kept it from gaining favor with veterinarians. This was probably due to the variation in the strength of the product, and it was decided to undertake the standardization of veterinary tetanus antitoxin prepared by different manufacturers and to determine whether they were subject to any variation in strength; and the result clearly demonstrated the variations in the potency of veterinary tetanus antitoxin at present on the market. Dr. Mohler said:

"The object in presenting this paper is to furnish a concrete example of the variation observed in this particular product at present on the market and to show the necessity for federal supervision of all vaccines, serums, antitoxins, viruses and analogous products including mallein, tuberculin, anthrax, and black-leg vaccine and hog cholera serum."

The investigation was carried out in accordance with an Act of Congress providing that the Secretary of Agriculture should purchase in the open market samples of these products for cure and prevention of disease, whether of domestic or foreign manufacture and test them and publish the result of said tests. But no authority was given with reference to the supervision and control of their manufacture.

With the discovery of the tetanus bacillus and its cultivation, its true cause was established. It was found that the organism is not present in the blood of animals dying of the affection, and the fatal results are produced by intoxication and not by the infection; in 1892 a successful immunizing method was worked out. In tetanus, unlike most of the other infectious diseases, the infection by the organism does not exert the destructive influence, but only the toxine of the organism is responsible for the serious results of the disease. The bacilli therefore produce a specific substance which has the toxic effect. This conclusion was arrived at as the result of experiments on mice, guinea pigs and other animals. Horses and sheep can be successfully immunized against tetanus and produce an active immunizing serum; horses are now exclusively used for the production of tetanus antitoxin.

With the establishment of the principles of immunizing against tetanus, it became necessary to adopt a method by which the potency of the antitoxin could be accurately determined. What is known as the "American Method" has been officially adopted under the biological product act of July, 1902. In this method the immunity unit for measuring the strength of tetanus antitoxin is fixed so that it shall be ten times the least quantity of antitoxin serum necessary to save the life of a 350-gramme guinea pig for ninety-six hours against the official test dose of a standard toxin furnished by the Hygienic Laboratory of the Public Health and Marine Hospital Service. Manufacturers of human tetanus antitoxin must state the number of units their products contain which insures serum of reliable strength and establishes a uniformity among the producers of tetanus antitoxin in America; but the antitoxin destined for veterinary use is still under no control and

there is no uniformity in the method, and the potency of the product is left to the honesty of the manufacturer; these manufacturers should be required to use the American standard and to state on the label the number of American units the dose contains, and the request for such requirement should have the endorsement of the veterinarians and live stock interests of the country.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The meeting was called to order at 2 p. m. January 12, 1910, by President Cotton. The registration blanks signed at the door showed 55 members and 17 visitors in attendance.

Secretary Leech read the minutes of the last meeting held at Stillwater in July. The same were approved. President Cotton then presented the following address:

PRESIDENT'S ADDRESS.

Gentlemen and Members of our Association: As your president, it is my duty to present you a few thoughts which impress me as necessary for the upbuilding and welfare of our profession and of this association.

I desire now to thank you for the honor you conferred upon me by electing me your president at our last annual meeting—an honor that I assure you is appreciated by me.

During the past year the association has suffered a severe loss in the death of one of our charter members, an ex-president, Dr. Richard Price. I am sure we all felt a sense of personal loss of a true friend. The profession and this association have lost a member of sterling worth, a broad minded gentleman with a wide and varied experience, who was always ready and anxious to help a brother in the profession; always ready to do more than his part for the welfare of this association. At our annual meeting, resolutions were adopted by the association, and ordered spread on the minutes.

Not since the death of Nocard has the veterinary profession of the world received such a shock as the news of the death of Dr. Leonard Pearson. We had all been cheered by the report of his slowly improved condition, when the message of his sudden death came.

Dr. Pearson was probably given more recognition by the veterinary and medical profession of this country and Europe than any veterinarian in this country. He was a man of lovable character, high minded and great executive ability, which was demonstrated by the building up of the best organization in our country for the state control of contagious diseases. He was dean of the Veterinary Department of the University of Pennsylvania, and in all probability that institution would not be in existence now had it not been for his untiring efforts with the University authorities, and the state legislature, and his success in interesting moneyed men in endowing the department. A few years ago, he told me, that he had abandoned all thought, of obtaining any of this world's goods, and that his life would be devoted to the profession, and to the Veterinary Department of the University.

It seems fitting that this association at this time adopt suitable resolutions on the death of Dr. Pearson.

Our profession the past year has prospered for the reason that the people throughout the state have been prosperous, and the services of the educated veterinarian are being more generally appreciated by the owners of stock.

Veterinary education in America is certainly on a much higher plane than any of us anticipated ten years ago. The veterinary colleges, as a rule, are doing splendid work. Not only the state institutions, but the majority of the private schools, are gradually raising the entrance requirements, and are building a more scientific, basic education for the young man, who is preparing himself in veterinary medicine.

I wish at this time to recall a few facts about the relation the veterinarian and this association should have to the public, and its welfare, as regards the control of the various diseases of animals that are communicable to man.

You all know something of the hard fight that was made during the last session of our legislature. The majority of the members of this association volunteered to take off their coats—and did do so—to help put down any legislation that might interfere with or put a stop to the control work that had already been undertaken by our sanitary board.

The senator who introduced the bill and made the fight which would virtually put a stop to the use of tuberculin, as a diagnostic agent, used as an argument, very convincing to the layman, that he and his cohorts had watched the test work care-

fully, had used some questionable methods in "juggling" with the tags of condemned animals, and had concluded from their findings that the test was not reliable. They stated that tuberculin did not begin to find all the diseased animals in a herd; that they had found a number of diseased animals in cattle that had been passed as free from tuberculosis. This was one of the hardest arguments we had to refute or overcome. We had to concede that very, very rarely an animal would fail to respond to the test if it was badly diseased, and the disease well advanced.

At the autopsy of the tested cattle killed before a committee from the legislature, all animals that reacted showed lesions, and in those that had not reacted, no lesions were found. The Senator and those who were fighting the test work had a member of this association representing them, and in an interview after the autopsy, this member said: "I still maintain that the tuberculin test is not conclusive in proving the presence of tuberculosis in animals. Senator Sundberg had nineteen head of cattle, and the fact that five of the animals showed no reaction after the test does not prove that they are free from the disease. We know from past experience that a cow may be badly diseased and still show no reaction. One of the condemned animals today showed no tubercular lesions, and Dr. Ketchum did not find any while I was there."

In answer to a question as to whether or not he thought the test had been properly made, he said he was not disposed to question the test. "I could find no traces of disease in the twenty-five cattle that were passed as healthy animals, and I admit that traces of tuberculosis were disclosed in thirteen of the fourteen animals condemned by the state board. The only point that I make is that the tests are not infallible."

It was certainly proper, if he wished, to represent these people as their veterinarian, but I cannot but feel that he did, not only himself, but the profession, and the only scientific test that we have for tuberculosis a great wrong and injustice. It would seem wise to me if this association would take some action censuring such work by its members.

Again allow me to express myself in regard to the tuberculin test. Our cities are demanding that before an owner can ship milk into market, he must show a certificate from some qualified veterinarian of a tuberculin test. Naturally the owner feels it a hardship and he does not want any cattle condemned. He employs his veterinarian to make the test. Of course, we are all

human, and it is natural that the veterinarian should wish to protect the interests of the owner who employs him, and he may be inclined to give him the benefit of a doubtful reaction; but, gentlemen, such work is neither to the interest of the owner nor to the credit of the veterinarian, and above all, it reflects on the tuberculin test.

Another practice that should be discountenanced by the association, is that of improper, and dishonest testing by veterinarians. We have history of tests in which the veterinarian took one temperature before injecting the tuberculin, and one the following morning, and gave the owners clean bills of health for their herds. But in sending in a record of the test to the State Live Stock Board, they gave a record of two preliminary temperatures and five temperatures after injection. The use and validity of the tuberculin test can never be sustained by this profession if we continue such practices as these.

The medical profession and numerous societies are undertaking to educate the public mind to believe that if they will observe the simple laws of sanitation, cleanliness, etc., it will go a long way in the control of tuberculosis in man. Our profession and every member of this association should feel it his duty to do all in his power to aid this work for the preservation of public health.

There is some difference of opinion as to the identity and transmissibility of bovine and human tuberculosis, but a large number of our scientists believe they are identical and transmissible from one family to another. The most conservative, and those who at one time insisted that the bovine tuberculosis could not be transmitted to man, now believe and concede that it is in a certain number of cases. The bovine type of tubercle bacilli are frequently found in tubercular glands, especially in children. It is now generally believed by authorities in human medicine, that at least three per cent. of all cases of human tuberculosis come from cattle. Agriculture and livestock are the mainstay of this country, and they cannot continue to succeed without proper control of contagious diseases, and we have got to educate the people and the legislature to this fact.

Our profession is recognized as the guardian of the live stock industry, and if we do our part in this campaign of education, we will be recognized as of material aid to the medical profession in the preservation of human health. It is only a question of a very short time when, through education, the public are go-

ing to appreciate the fact that the system of meat inspection now carried on by the Federal Government for inter-state trade only is a source of danger to local consumers, because, owners having cattle, hogs, or sheep for slaughter, if they are afraid of the inspection, will have animals slaughtered at local abattoirs where there is no inspection and the public are going to demand that the system of Bureau inspection be extended to include all meats offered for sale. This much-to-be-desired result will come with the education of the people, and this association should be foremost in that education.

Our legislators are sure to pass a law providing for meat inspection, and a large majority of them have no knowledge of the subject; therefore it is the duty of this association to direct such legislation.

It has been said by some of our members that in the past too much time has been devoted to routine business, committee reports, etc., at the expense of the literary portion of our programme. I think a great deal of our business could be delegated to committees and thus much valuable time be saved. The secretary, through untiring efforts has succeeded in obtaining a more extended program for this meeting, and it was thought necessary to have a three day meeting, in order that more time might be given to the papers and their discussion.

The social features of our meetings should not be overlooked. It does us all good to come in personal contact with men who are engaged in the same work, to exchange confidences, profit by other's experiences and mistakes, and to renew old and make new acquaintances and friendships; and we go to our homes feeling stronger and better prepared to continue life's battle.

DR. LEECH, AS SECRETARY, REPORTED AS FOLLOWS:

Mr. President and Gentlemen: Just one year ago I remember very well Dr. Ward standing up here in this room adjoining and saying, with all due respect to previous secretaries, that we wanted a live secretary. However, I objected to taking the position on that condition, and while I was more than overloaded with work, I finally had to comply with your request. How well I have succeeded in doing that it remains for you to determine after this meeting is over. We have completed two banquets during this last year, as well as the last semi-annual meeting. I believe there are those here to-day who can speak for themselves as to the credit of those two entertainments. It

will remain for you to give your decision when this meeting draws to a close.

During the year this office has handled in all over \$600.00 of money from this society, from all sources. The expenditures for this society have been something over \$500.00, leaving us quite a snug balance in the treasury at this time. But at the last meeting it was recommended that the dues should be raised to \$2.00, in order that whoever might be secretary, should have within his hand that which would give him the power to increase the program materially, and as such he would then be endowed with power, to call in from the outside such men as would be entertaining and would give subjects of interest to the society. That was the argument used in increasing or recommending the increasing of dues. This matter was taken up at the Stillwater meeting, and voted to increase the dues to \$2.00 per year, of which I think nearly every one has received a notice.

That will give us a good working basis by which we can put this society upon a first-class firm footing, both financial and social. I hope my successor will be able to give you something better than I have given you during the year. It has been my good fortune during the last year to be able to secure something very good and first-class, without a great amount of expenditure, therefore our expenditures have been kept down to a reasonable basis. The outgoing secretary turned over \$160.00 as nearly as I can remember without looking at the report, and you will see that we have not increased our expenditures because we have over \$100.00 in the treasury; there has been extra expenditure this year, but I have been able to secure this time, from outside source, quite a good deal of material without a great amount of outlay. This cannot be done every time, but knowing the condition financially I have been able to secure those people upon the program which I hope will be interesting to you and will meet your endorsement.

The labors of this office are getting quite laborious. There have been during the year over 800 packages of all sorts mailed out of the secretary's office with an expenditure in the neighborhood of \$20.00 for stamps. You will see that it means something for a typewriter and secretary to do.

I would recommend that every member use their influence to secure membership from those who are known to them. It is not always possible that the secretary shall be in touch with every new member of the profession. If you know of men

within your reach or realm who are suitable for membership in this society, I would urge upon you the necessity of trying to get them into the society, because, by increasing the membership in the society, we increase our financial standing, and at the same time we increase our material to draw upon to make a better program in every way. I would also recommend that a better interest should be taken among members for program material. There is hardly a member in this society, who cannot write something of a paper, who cannot give something of a case report, who cannot within the year have some thought that would be of interest to those of the society, and have that in his mind so that when the secretary calls on him he can respond. Those practical matters, coming before the society, will be of more interest than those coming from professional sources (that is men representing scientific work), and that will give a better feeling among those members who are practicing in the field, and I would recommend every man to use his influence to get people interested in that line. I do not like to say it, but if you had sent out ninety letters, with requests for papers, and received only replies from five to seven men, saying that they would give papers, it would be rather discouraging.

THE REPORT OF THE COMMITTEE ON COLLEGES

was given by Dr. Mack, chairman, who presented a very able and lengthy report covering all the ground of investigation made by the committee appointed by the government on college investigation, as well as all the improvements made since that time at the suggestion of said committee. The report was adopted.

REPORT OF INFECTIOUS DISEASES COMMITTEE.

J. G. Annand, Chairman; T. Lambrechts.

In the absence of Chairman Annand of the Committee on Infectious Diseases the president requested Secretary Leech to read the report, and then called upon a number of gentlemen to speak on the subject.

Glanders.—During the past six months there have been 1,251 horses inspected; 683 horses were tested, of which 119 were killed on account of reacting to the test.

Tuberculosis.—Since July 1 to December 31, there were 6,001 cattle tested for tuberculosis, of which 313 reacted.

Hog Cholera.—A few outbreaks of hog cholera have been experienced, and the disease has been controlled by the use of the serum method of immunization.

Anthrax.—Two outbreaks of anthrax were reported; one in the northern part of the state, and one in Dakota county. All animals on the farm were properly vaccinated and the disease promptly checked.

President Cotton first called upon Dr. Ward.

Dr. Ward—I have nothing new to offer on infectious diseases. The report as given by Dr. Amand covers the number of outbreaks which we have encountered during the past six months. We have had two outbreaks of anthrax which were investigated by Dr. Beebe, and all animals on the premises were vaccinated. We have had numerous reports of swamp fever, probably more in the last three months than we have ever had. This is probably due to the season more than anything else. Upon being asked by the president if he could at that time make any statement as to the results of the experiments of the Board with outbreaks of hog cholera, Dr. Ward replied: Where we have encountered outbreaks of hog cholera, we have suggested to the people surrounding the outbreaks that they vaccinate their hogs as a preventive against the disease. In a great many cases the farmers took advantage of the vaccine and sent to the Experiment Station and secured same. The cost is about 50c. per dose, and is sent out by Dr. Reynolds, C. O. D., and the Board has endeavored to show the veterinarians (in centers where the disease was prevalent) how to do the work. So far my opinion of the method is that it is undoubtedly the only thing that will stop the spread of the disease, if the serum is good, and work done by veterinarians. We have not done as much work with the vaccine as we would have liked. The State Experiment Station got \$10,000 from the legislature and a part of it is being put into buildings for the purpose of keeping hogs and manufacturing the serum. I think the sanitary board used up the serum as fast as it could be manufactured at the Station. I presume next year the Station will get out a greater amount than they did last year.

The President then called upon Dr. D. B. Clark, of Wisconsin.

Dr. Clark—I have not come prepared to give statistics showing the work done in Wisconsin, but since the first of July there

has been somewhere about 8,000 cattle tested in Wisconsin, with over 300 reactions. Last year 43,700 cattle tested, with 2,998 reactions. There were 33 horses killed with glanders last year. I do not remember the number that has been killed so far this year. There were six animals affected with Johnne's disease last year, and this year we have killed about four so far. One thing very interesting is that all the cattle killed with this disease so far have been Guernsey cattle. Now, whether that has been brought over from the old country and kept among those breeders I do not know. I will take that back, as there has been one Shorthorn, and all the rest have been Guernseys. I would like to know if the statistics in Minnesota have been the same. We tried to get our State Legislature to appropriate some money, but you people in Minnesota appreciate the position of the Sanitary Board in Wisconsin. That there has been considerable rivalry between the sanitary board and the university. The members of the legislature said that work should be done by the university, and not by the sanitary board, but adjourned without making any provisions for the university to take up the work.

As yet we have not done anything to control hog cholera, other than to quarantine the premises. There have been in the last year two outbreaks of anthrax; one on our State University Farm and one in Racine in the south portion of the state. The animals on the university farm were all immediately vaccinated. In the vicinity of Racine we lost about 8 or 10 cattle, and all remaining cattle were vaccinated. One man in the vicinity of Racine contracted what the physicians claimed to be anthrax, and he went to the hospital for two weeks. He returned much better and the veterinarian at Racine told me he would let me know if he died, and as I have not heard, I presume he is living yet. It might be interesting to you to know that one case recovered from anthrax.

Dr. Cotton called on Dr. Beebe for remarks as to Johnne's disease.

Dr. Beebe—We have only had three or four outbreaks that we have been able to follow up. One of those was in Wisconsin, and that outbreak was among Guernsey cattle, all pure bred. I know of another outbreak in the northern part of this state. They were all grade shorthorns. It is not in any particular cattle, in fact I know of some places where it has been in grades and in scrub cattle, so-called.

Dr. Clark—I do not want to be understood as thinking that the Guernseys are more susceptible to it, but it has been our experience in Wisconsin, except in the one case, the animal was a shorthorn.

Dr. Cotton called upon Dr. J. P. Foster, of South Dakota, for a talk.

Dr. Foster—In territory assigned to me at the present time, the efforts of the Bureau of Animal Industry are directed principally toward the eradication of scabies in cattle, although a certain amount of work is being done along other lines. Asked in regard to anthrax in South Dakota, Dr. Foster said: There was a great deal of anthrax in the southeastern part of the state during the summer and fall of 1908 and some in 1909, but I have not heard of any trouble of this kind for several months.

Dr. Cotton called upon Dr. E. J. Davidson, of North Dakota.

Dr. Davidson—I do not think I can give you very much information. I expected Dr. Crewe, our State Veterinarian, to be here. I do not know what the situation is this year. Last year we had over 1,000 head of horses killed on account of glanders. I have not heard of any anthrax. We are gradually cleaning up glanders, and expect to do a great deal better. We had no appropriation until last year, and pay now about \$50.00. We cannot appraise a horse over \$100.

Dr. Ward, chairman of the committee on Legislation and Empirics, stated that he had nothing to report. He said: There has been no legislation during the past six months, and as far as the empirics are concerned, Dr. Reynolds has looked after it, and the examining board has made a report showing a number of empirics.

President Cotton then asked him if it would not be a good time for him to explain the new law about pure-breds, which went into effect the first of January, this year.

Dr. Ward—I think most of the members of the association know that the law passed a year ago. This law requires that all persons selling pure-bred cattle, or cattle represented to be pure-bred, shall furnish the buyer with a certificate of health certifying that the animal has been tested, which certificate shall be made out by the Live Stock Sanitary Board, certifying that the board has tested the cattle, and they are free from tuberculosis. This law did not come into effect until the first of the year, as it was thought best to give the breeders nine or ten months to prepare for it. So far we have received a great many favorable com-

ments on the law. There are, of course, one or two who are somewhat opposed to it, for the very simple reason "I presume," that tuberculosis is present in their herds, and they do not want the fact brought out. We have tested a great many herds, probably 400 cattle in the last six weeks, with about 36 reactions. These were herds which had never been tested. We ran into two bad herds, one herd in particular which was put up at auction two or three weeks ago, but the cattle were not delivered until the certificate of health could be given with them. The result is the cattle were killed yesterday at South St. Paul, and the owners are minus their purchases. It is the best law so far as the conservation of live stock interests are concerned. It means that when people buy a pure bred animal, it will be like a man purchasing a horse—and he will want to know that it is absolutely sound. Heretofore people have neglected that part and bought where they could to good advantage.

Dr. Gould—I would like to ask Dr. Ward if the local veterinarians are supposed to test cattle and issue a certificate?

Dr. Ward—The law requires that the tuberculin test certificate shall be made out by the Live Stock Sanitary Board.

Dr. Amos—I would like to ask if a certificate by a local veterinarian would be honored by the board; one of my patrons made that inquiry the other day.

Dr. Ward—There is no reason why a local veterinarian should not be permitted to make the test. The sanitary board vouches that the test was properly conducted, that the animal did not react, and consequently if the state has to back the certificate of the local veterinarian, it will be necessary for the state to have confidence in the local veterinarian who makes the test, and to absolutely depend upon the integrity and conscience of the veterinarian who does the work. In that case the state will honor the local veterinarian's certificate.

REPORT OF COMMITTEE ON BACTERIOLOGY.

W. L. Beebe, N. Y. S. V. C., St. Paul, Minn., Chairman.

One announcement I would like to make at this time, although it does not properly belong to this report, and that is that the State Live Stock Sanitary Board has established a laboratory in the Old Capitol, so that hereafter when you send in specimens, please send them to the Old Capitol, instead of the Experiment Station. Specimens should never be sent by mail. The postal regulations are so strict, that if you comply with them

it would take too much time, and the average veterinarian is not in position to have the necessary requirements. They require that they shall be sent in a carton, and then inclosed in glass inside of that, and that is too delicate for the average man to take care of. Please send specimens by express, and we will get them as soon as though sent by mail.

Another thing, send specimens in a container that has a tight bottom, usually a tobacco or candy pail is satisfactory. Very frequently, I get specimens of a dog's head sent in a wooden box, and the blood is leaking through the box.

This evening we are to have a paper on anterior poliomyelitis, or infantile paralysis. I believe Dr. Shore is going to show, that infantile paralysis is the same disease as he has in his locality in horses. I would like to say that Dr. Flexner has been able to demonstrate the cause of the disease. He has been able to pass through a clay filter a virus and reproduce the disease in monkeys. He is able to take the germ from the spinal column, and after an incubation of 24 hours, get a cloudiness in the fluid, and from that fluid he can carry this to the second generation, and get a cloudiness, and that second fluid he can inoculate monkeys subdurally, and get the disease, so he has proven quite conclusively that the disease is due to an ultra-microscopical organism.

When he makes the stain from this fluid he is only able to get haziness; probably organisms are there but size and shape cannot be determined. The other day I happened to be called to an outbreak of trichinosis. This does not properly belong to a report on bacteriology, but owing to the fact that we have no zoologist in the association, I would like to give a brief outline of it. This occurred in Goodhue county in this state. Last spring the man who owned these hogs, noticed that they were not well, and were sore when forced to move about the pen, and some of them got very poor, but finally they appeared to recover, with the exception of one, and he thought they were all right, so he killed one of them on November 29 for his own use. They were German people, so the wife started to make some summer sausage on the following day, and in process of making she tasted it to see if it was of the proper flavor, and eight days after she became sick. The day she became sick the family began to eat the sausage, but it was not smoked enough. On the tenth day they were having a bee there, and several of the neighbors ate of that summer sausage for dinner. Eight days later all

of the people who ate the summer sausage became sick, but the people who ate it two days later did not get sick, so probably the smoking killed off the trichinae. Now the symptoms that these people showed are quite similar to typhoid fever. They had a fever of probably 102 and 103, and were generally malaise, had loss of appetite, and several had an eruption on the body. Another thing was very marked, soreness in the muscles, and if they move a finger there was such soreness that they would holloa. They have been sick about five weeks now, and one or two have an eruption similar to measles. Physicians who had these cases in charge obtained some of the meat that was eaten and were able to find the trichinae in the meat. I obtained some of this meat, and to-morrow morning I will have a microscope, and if any of you care to, you may see the specimens in room 110.

Dr. Rogers—He just mentioned the fact that he found difficulty in getting the proper containers to ship a small bacteriological specimen in. In New Jersey the State Board of Health supplies these double cartons, the inside being a small glass jar, and we see to it that every druggist in the State of New Jersey has them on hand to supply free of charge to veterinarians or practitioners who wish to ship specimens or cultures to the state laboratory for examination. We also supply them with a little report blank. We find it works very satisfactorily. The druggists are glad to co-operate with us, and all around it works very nicely. It struck me that our New Jersey idea was one worth adopting.

Dr. Cotton—How large are these containers?

Dr. Rogers—They will hold about 25 c. c.

Dr. Beebe—That idea might be all right provided we could co-operate with the State Board of Health and get them to use some kind of carton that we use, but I think we could not do that, for they have their containers ready to ship out. Then, also, I fear it would not pay the druggist to keep them in stock, and furthermore, there are a great many farmers who send material in anything they can get hold of. In fact I have had them send in a piece of pork and wrap a letter around it. The veterinarians usually send specimens in pretty fair shape. The only objection I have is to their sending in a dog's head in a wooden box, which is liable to have the bottom drop out at any time. I wish they would not do that.

Committee on Surgery not present, report was deferred and Committee on Medicine had nothing new to offer.

Under the heading Legal Matters, the secretary furnished the association with a report which included legal opinions of the former Attorney General, policy in prosecution suits and a list of prosecutions under the law of Minnesota, which show that Minnesota veterinarians are well organized and are earnest in their desire toward higher veterinary education in their state and in a determination not to tolerate quackery.

Under head of new business, the following delegates to the American Veterinary Medical Association were appointed: Drs. W. Amos, Owatonna, and M. M. Fulton, Moorhead. Election of officers followed with the following results:

President—Dr. J. P. Anderson, Rochester.

First Vice-president—Dr. R. R. Donaldson, Argyle.

Second Vice-president—Dr. Edmund Mackey, So. St. Paul.

Secretary and Treasurer—Dr. G. Ed. Leech, Winona.

Board of Directors—Dr. J. P. Anderson, Dr. G. McGillvray, Dr. C. A. Mack, Dr. C. S. Shore, Dr. G. Ed. Leech.

January 12, 1910, 8 p. m.—Meeting called to order by President Cotton. The first number on the program was a stereopticon, "A Surprise."

Dr. Leech—This is prepared for your entertainment and consideration. Nearly all of the past presidents of the American Veterinary Medical Association, some of the prominent men we have in *our* society, and a few comic pictures of things and creations, which I think will be of interest to the profession, and with your consent we will now throw them on the screen. Pictures were presented, which were greatly applauded. Reading of papers followed.

SEMI-ANNUAL MEETING OF THE MISSOURI VALLEY VETERINARY ASSOCIATION.

The semi-annual meeting of the Missouri Valley Veterinary Association was called to order by the president, Dr. A. T. Kinsley in the New Casino, Kansas City, Missouri, at 8.30 o'clock Wednesday, February 2, 1910.

The roll call was dispensed with as registration was made at the door. One hundred and twenty-two members and one hundred and thirty-eight non-members, also about five hundred veterinary students, registered at the door.

The minutes of the previous meeting were adopted as printed in the *Missouri Valley Veterinary Bulletin*.

The Board of Censors having met at a call meeting at 7 o'clock P. M. Tuesday, had the following report to make:

The following names duly vouched for were favorably passed on: Colorado—Drs. G. W. Dickey, Colorado Springs; Chas. G. Lamb, Denver; A. W. Whitehouse, Ft. Collins; Geo. H. Glover, Ft. Collins. Missouri—Drs. B. W. Murphy, St. Joseph; C. L. Allen, Harrisonville. Nebraska—Drs. F. E. Rathbun, E. Watkins, Cambridge; C. S. Breed, Omaha. Iowa—Drs. A. H. Quin, Creston; F. E. Williams, Odebolt. Kansas—Drs. H. M. Graefe, Douglas; J. R. Jeffars, Ft. Riley; B. A. Robinson, Independence; C. P. Sneed, Kansas City; R. B. Doty, Peabody; S. S. Dunlap, Marysville; K. W. Stouder, Manhattan; T. R. Allison, Winfield; T. Symms, Hutchinson; J. F. Jones, Arkansas City; W. Symms, Hutchinson; G. T. Burns, Hepler; F. M. Hayes, Manhattan; A. A. Eastman, Osborne; O. O. Wolf, Ottawa; T. H. Brady, Overbrook. Indiana—J. L. Osborn, Culver. Illinois—J. M. Kaylor, Bang. Texas—F. E. Burns, Waxahatchie. Oklahoma—L. L. Lewis, Stillwater.

Moved, seconded and carried that the secretary be instructed to cast the vote of the association for these names read to be placed on the membership roll. The secretary then cast the vote of the association.

The following report upon the charges made against Dr. D. W. Nolan, of Wichita, Kansas, was presented: "After careful examination of all evidence pertaining to charges brought against Dr. D. W. Nolan, of Wichita, Kansas, for violating the code of ethics of this association, it is unanimously voted that the association be asked to expel Dr. Nolan from its membership."

(Signed) C. E. STEWART, Chairman.

R. EBBITT.

R. F. BOURNE.

C. R. WALTERS.

E. BIART.

Moved, seconded and carried that the report be accepted.

The following report was presented by the committee on revision of the constitution and by-laws:

FEES OF OFFICERS.

Art. IX.—All offices held in this association except that of secretary-treasurer, under the constitution and by-laws thereof,

are hereby declared to be offices of trust and honor to which no fee or emolument is attached, but other offices of emolument may be created.

Art. X.—The secretary-treasurer shall receive fifty dollars (\$50.00) per annum and actual traveling expenses, not to exceed fifty dollars (\$50.00) annually.

It was moved, seconded and carried that the secretary be authorized to collect dues from February to July, 1910, only, at the rate of \$1.00 per annum from each member.

The resignation of Drs. J. P. F. Smith, Kansas City, Mo., and A. T. Knowles, Louisville, Ky., were accepted.

The secretary then read a letter from Dr. R. P. Lyman, secretary of the American Veterinary Medical Association, extending an invitation for this association to elect one or more delegates to represent the association at the annual meeting of the American Veterinary Medical Association to be held in San Francisco, Cal., September next.

Moved, seconded and carried that the invitation be accepted and that the president be empowered to appoint two delegates. (These appointments will be made later.)

The first paper presented was one from Dr. D. M. Campbell, on the subject of "Sera and Vaccines." The doctor gave a lengthy paper on the subject, completely reviewing the subject up to date and drawing attention to many changed ideas (the result of recent research) among which are the views of some believing the stimulation resulting in the manufacture of anti-bodies in blackleg due entirely to the endotoxin. This discussion was followed by an excellent paper on the subject of "Synovitis." by Dr. H. J. MacCartney, of Alba, Mo.

Dr. D. B. Leininger, Kansas City, Mo., presented a carefully prepared paper on the subject of practical horse shoeing. This paper brought out a good discussion.

Dr. D. F. Luckey, state veterinarian of Missouri, then gave an excellent talk on the subject of "The General Welfare of the Veterinary Profession." He discussed the problem of uniformity in laws of states in regards to contagious diseases. There should be fixed a uniform price of charge for inspections of animals going from one state to another. The state men having this work in hand should meet and decide on a uniform certificate.

A system was advocated that will allow healthy animals to be shipped from one state to any other in the union.

Dr. P. Juckiness, state veterinarian of Nebraska, stated that he had established a uniform schedule price for tuberculin testing of cattle in that state. For one animal the practitioner may charge \$5.00 and for each additional animal up to ten \$1.00, then 50 cents for each animal after that.

Dr. Luckey stated that Missouri required temperature charts to accompany the certificate of health.

Dr. O. O. Wolf, of Ottawa, Kansas, advocated a uniform certificate to practice. Said certificate to be interchangeable from one state to another. Dr. Luckey, secretary of the State Examining Board of Missouri, stated that they would enter into an agreement with other states to forward examining papers to any other state when one of her practitioners moved to another state to practice, thus saving the practitioner the time and expense of taking another examination in the later state.

Following this discussion, Dr. D. O. Knisely, of Topeka, Kansas, presented a paper entitled "Acute Indigestion in the Horse." The discussion was participated in by Drs. Lyman, Liegerot, and others.

Dr. B. F. Tumbleson, of Ulysses, Nebraska, presented an interesting paper on the subject of "Shots at Random."

Dr. O. E. Troy, of Rayton, N. Mex., presented a paper on the "Application of the Tuberculin Test" in that state. It was moved, seconded, and carried that discussion of this paper be deferred till that part of the second day's program which was to be devoted to tuberculin testing and autopsy.

Dr. T. W. Gidley, of Malvern, Ia., gave an interesting case report. The case report of Dr. B. J. Baker, of Mitchel, Nebraska, was read by title and given to the publishing committee. Dr. F. M. Starr, of Odessa, Mo., gave an interesting case report of an animal died of Intestinal Calculus. Dr. C. F. Pinkham, of Solomon, Kansas, gave a case report.

Meeting adjourned at 5.30 P. M.

A reception was held in the parlors of the Coates House at 6 o'clock P. M. The banquet was served at the same place at 7.30 P. M.

After the banquet was served, preparations were made for a stereopticon demonstration.

The first talk was by Dr. Frank Hall, City Food Inspector, of Kansas City. His subject was "Food Inspection from an Inspector's Viewpoint." A vote of thanks was extended to the doctor for the excellent manner in which he presented his subject.

The fact was clearly elucidated that much money is spent by cities for things less important than for the protection of the food supply. The preservation of the health of a nation is of the first importance to that nation, city or community. He advocated first the preservation of the public health giving practical illustrations; much money is spent in the police force to protect the people from petty larceny, but scarcely any money to protect the people from impure and contaminated foods, thus looking to the preservation of the public health. This is pretty universally the case all over the United States. He stated as his opinion that the most common diseases of a contagious nature was communicated through contaminated or diseased meat, milk and other foods (including the water supply).

This talk was followed by one from Dr. E. P. Niles on "Parasites a Cause of the Condemnation of Meat and Meat Food Products." This talk was illustrated by lantern slides.

Dr. R. F. Eagle gave a talk on the sanitary phase of the premises where food products are prepared at the packing houses and of the complete and excellent sanitary inspection carried on by the United States Bureau of Animal Industry. This talk was illustrated by lantern slides.

Vocal music was furnished by the student quartette of the Kansas City Veterinary College.

The meeting on Thursday, February 3, was held in the clinic amphitheatre of the Kansas City Veterinary College. The meeting was called to order at 9 o'clock by the president, Dr. A. T. Kinsley.

The first subject taken up on the clinic program was a demonstration of the technique of tuberculin testing of cattle. Five animals (cows) were used. This phase of the work was in charge of Dr. D. F. Luckey, state veterinarian of Missouri; Dr. Paul Juckiness, state veterinarian of Nebraska, and Dr. Chas. G. Lamb, state veterinarian of Colorado. The cattle had been previously prepared by having the temperature record before and after the tuberculin injection. These temperatures were printed upon large strips of canvas so that the thermic line could be followed, thus showing the temperature of each animal every two hours.

The first talk was by Dr. Luckey, in which he gave a review of the reacting cases. He called attention to the danger of leaving tuberculous cows in the herd as perhaps 5 per cent. of tuberculous animals do not react; also the danger of error of perhaps

5 per cent. of animals reacting in which tuberculosis, if it is present, might not be visible to the eye upon macroscopic examination.

Dr. Paul Juckiness also discussed the temperature charts. Dr. Luckey then conducted an autopsy upon one of the reacting animals. The temperature of this cow after the tuberculin injection ran as high as 105°. The doctor demonstrated his method of conducting autopsy. The first step after skinning the animal is to lay the carcass on the left side. This position is of advantage, because of the fact that the rumen will then be located on the under side. The cartilages of the ribs are then cut at the costochondral articulation, then by cutting the ribs about four inches from the vertebra the entire thoracic wall may be easily removed after cutting the diaphragm. The doctor makes a practice of laying the ribs, after their removal, in such a way as to act as a receptacle for the lesions found.

The superficial lymph glands, including the precrural, pre-scapular and post mammary, were normal. The post pharyngeal lymph gland was as large as a man's fist. This contained tubercular material.

The mediastinal, portal and mesenteric lymph glands were normal. The liver and spleen were also normal. There were a few tubercular nodules in the right lung.

Dr. L. D. Brown, of Hamilton, Mo., added to the discussion. He advocated giving double doses of tuberculin to cattle that had recently been tuberculin tested, at least if the succeeding test be given in from two weeks to three months. He also stated that reactors fall off in the yield of milk, while those that do not react are undisturbed in their yield during the tuberculin testing. Dr. Juckiness stated that he considered the eye test reliable. He also stated that cases which react, and upon macroscopic examination no lesions are found, the tubercle bacilli can be demonstrated by standing in the laboratory.

Dr. Luckey stated that he found a camel hair brush the best for use in applying the tuberculin to the eye.

Dr. Griffith, of Cedar Rapids, Ia., stated that 13 per cent. of the dairy cows were found affected with tuberculosis when dairy inspection was established. Dr. A. T. Peters, of Illinois, reports that the eye test has been very satisfactory, especially when heavy tuberculinized.

At 12 o'clock a lunch was served in the microscopic laboratory.

At 1 P. M. the meeting was again convened. The first part of the afternoon program consisted in a demonstration of the technique of mallein testing with a general discussion and demonstration by autopsy of two of the reacting animals. This work was to be in charge of Dr. P. O. Koto, state veterinarian, of Iowa; Dr. J. M. Wright, state veterinarian of Illinois, and Dr. F. S. Schoenleber, state veterinarian of Kansas. In the absence of Drs. Schoenleber and Wright, Dr. P. Juckiness conducted the autopsies.

Dr. Jeffris, army veterinarian, Ft. Riley, Kansas, discussed his experience with glanders in Cuba and the Philippines.

The first horse, a reactor, was destroyed by receiving 5 grains strychnine sulphate intravenously.

This horse not only reacted, but also showed clinical symptoms. Two degrees rise in temperature was noted, as well as a stiffness in gait and large and very sensitive swelling at the point of injection of the mallein. The left hind leg was considerably swollen below the hock and showed several well developed farcy buds. The lungs showed many glanders nodules.

Dr. A. Plummer, army veterinarian, of Ft. Riley, Kansas, discussed the subject of glanders and malleination.

Dr. A. Trickett, Kansas City, Mo., gave a talk on the history of three of the five glanders cases.

Dr. P. O. Koto gave a discussion of the subject of glanders. He stated that without clinical symptoms in reacting cases, visible lesions will manifest themselves after a long time, making it imperative from a health standpoint to keep them in quarantine, in case they are not destroyed. It is reported that lesions appear as late as eighteen months after reacting.

Dr. C. J. Sihler, of Kansas City, Kans., stated that he believed that mallein had a certain amount of curative properties.

Dr. D. F. Luckey stated that he had no faith in mallein and that he had quit using it as a diagnostic method.

Dr. C. E. Stewart, of Charlton, Ia., discussed to some extent his experience with glanders.

Dr. C. H. Jewell, army veterinarian, of Ft. Riley, Kansas, reported his experience with mallein in the United States and in the Philippines. He questioned its value without clinical symptoms. He reports autopsy on one reacting case in which the only lesions of any kind found was alveolar periostitis.

Dr. H. E. Talbot, of Des Moines, Ia., stated that in his experience mallein has been very discouraging to him.

Dr. D. O. Knisely, of Topeka, Kans., and Dr. K. W. Stouder, of Manhattan, Kans., contributed to the discussion.

A second reacting horse was also autopsied by Dr. Juckiness. He demonstrated glanders in the submaxillary and mediastinal lymph glands and also in the lungs.

The time up to 4 o'clock P. M. was taken by these demonstrations.

This left altogether too short a time for the demonstration of the immunization of hogs against hog cholera. The fact is everything was pushed along with precision and rapidity.

In this demonstration Dr. J. W. Connaway, Experiment Station Veterinarian of Missouri, gave a valuable demonstration of the immunization of hogs against hog cholera. Some of the valuable hints given were:

Potent serum is not easily made. It is necessary that germs of septicæmia do not find their way into the serum. A large hog will yield up to 3,000 c. c. of hyperimmunized serum. The posterior part of the hog is shaven, scrubbed with an antiseptic solution, then with a sharp chisel the end of the tail is cut off, from which source the blood is obtained. A sterile fruit jar can be used to catch the blood in. The top is covered with a sterile cheese cloth, a perforation is made in the center. The pig's tail is thrust through this hole, lessening the danger of contamination. After the jar is full a rubber band is placed around the end of the pig's tail to arrest hemorrhage, then the jar is taken to the laboratory. The contents is kept sterile, later the serum is pipetted off with a sterile pipette and preserved in sterile receptacles with 5 per cent. carbolic acid. Twenty c. c. of this serum is given to the pig for each 100 pound weight. To produce hyperimmune serum the hog is given 1 to 2 c. c. virulent blood with 20 c. c. of immune serum. Hogs injected with immune serum in herds where they were dying has resulted in a saving of an average of 90 per cent.

The doctor makes a practice of injecting the fluid into the muscle of the ham (from the inner side), except in sows heavy with pigs, in which case he makes the injection under the skin in the region just back of the ear. For hyperimmunizing a hog several inoculations are necessary. These inoculations are made about ten days apart. The practical demonstration on the live hog was very instructive and appreciated by all.

The first idea of hyperimmunizing against hog cholera in this country was copied from the process of hyperimmunizing cattle against cattle plague in South Africa.

The state of Illinois has appropriated quite a sum of money for the production of serum and the eradication of hog cholera, and has employed the services of Dr. A. T. Peters, formerly of Nebraska.

Missouri has appropriated considerable money, which allows Dr. Connaway to carry on the work in a limited way.

In the discussion the fact was brought out that passive immunity lasts about six weeks, but in Dr. Connaway's method where the hogs are on infected premises, the germs that the hogs pick up results in further immunity.

This meeting was by far the greatest in point of attendance and quality of program of any ever held by this association.

B. F. KAUPP, Secretary.

SPECIAL MEETING OF THE MICHIGAN S. V. M. A.

This association met in extra session at Saginaw, Mich., January 25, 1910, pursuant to a resolution passed at last regular session. President Muir called the meeting to order and called upon Dr. Stewart, Mayor, who in a happy manner welcomed the association to their city. Dr. Joseph Hawkins, of Detroit, responded in a like spirit and thanked the mayor for his hearty welcome.

Roll-call showed forty-six members present, besides three honorary members and nine visitors.

President Muir in his address said:

"At our last annual meeting you honored me with the office of chief executive, a distinction I did not solicit, and in accepting the office of president of this splendid organization I recognized a duty that each and every member owes his association, and it has been my aim to accomplish deeds that will be productive of much good to our association.

"Our membership is growing, as the report of your secretary will show, but on the question of dues I would recommend that they be increased so that we can have sufficient funds with which to produce even better returns to our members than we have in the past. We are not organized for profit, but there comes times when we have occasion to disburse money in the interest of our organization, and with the annual dues fixed at, say, \$2

for each member, we can financially combat any foe that may present itself.

"You are all aware that our time is limited, and I would suggest that our members appear promptly at our session, and aid in expeditiously disposing of the business to be brought before this meeting.

"I sincerely trust that our work here will help to better conditions for our association and each individual member, and upon this occasion I wish to extend my appreciation to our worthy secretary for his able assistance to your president this past year."

The proceedings of the last annual meeting were read and, there being no corrections to be made, they were approved by the president.

After the reading and approval of the record, fourteen gentlemen were elected to membership.

Professor Marshall's time being limited, the report of the Committee on Diseases was taken up at this time.

The professor spoke of the proposed veterinary course at the M. A. C.; it was desirous of meeting a committee from the M. S. V. M. A. in the near future.

Speaking of hog cholera, he said that diagnosis was the most difficult, and that as diagnosed in books and reports, it is not always typical hog cholera and warned against such, as they are not correct. Swine plague, so-called, is probably hog cholera, and is a representation of what is likely to be found. There is not a constant symptom, but at the same time all may be found. No person can positively diagnose hog cholera; even when produced you cannot do so. It is possible, I believe, to clean up hog cholera by serum treatment alone. Have the farmer order the serum, and then charge him for using it, but under no circumstances advise him to use it; let him decide that point for himself.

The serum is pretty nearly as perfect as any biological product.

Of tuberculosis, the situation at present is that 3 per cent. of all the cattle are tuberculous. Out of two million or two million and a half in Michigan sixty thousand are tuberculous. Pure-bred cattle are much more affected. It is as prevalent in Michigan as other states. Professor Marshall went into control work and said that Minnesota had the best methods; said that it would take one to two thousand veterinarians over one year to test all the cattle in Michigan. The professor's report was a comprehensive history of tuberculosis in this state, and he closed his

talk by urging a closer relationship between the stock-owner, farmer and veterinarian.

It was moved that a vote of thanks be tendered Professor Marshall for his able and instructive report, which was carried by a rising vote.

Dr. Giltner not being present, the Committee on Diseases report was deferred until later and the report of secretary and treasurer was submitted and referred to Committee on Finance.

Dr. Waldron, reporting for Committee on Legislation, gave a history of the efforts that were made to amend our veterinary law at the session of the recent legislature.

Dr. F. M. Blatchford, speaking for Committee on Finance, stated that the secretary's and treasurer's accounts were found to be correct and balance on hand as stated.

Dr. Krey, reporting for the Committee on Intelligence and Education, said that on a recent visit to the O. V. C. he had found things progressing favorably under the new conditions existing. He asked if the association could not take some official action toward suppressing correspondence veterinary institutions, one of which is apparently thriving under our noses, referring to a veterinary correspondence dental course in Detroit. This important subject received no further action because of limited time.

Election of new members now being in order, it was moved and supported that the rules be suspended and that the secretary cast the ballot for their election. Carried. The secretary cast the ballot as directed, and President Muir declared the applicants elected to membership.

SAGINAW, January 26, 1910.

Meeting called to order at 10.15 a. m., President Muir in the chair. Secretary announced that a photographer was waiting in front of the auditorium to take a picture of our members in a body. The association therefore adjourned for ten minutes for that purpose.

Upon reconvening, election of officers was taken up and resulted as follows:

President—Dr. J. W. Brodie, Pontiac.

First Vice-President—Dr. W. L. Brenton, Detroit.

Second Vice-President—W. J. Rook, Holland.

Third Vice-President—R. F. Erwin, Alma.

Secretary-Treasurer—Judson Black, Richmond.

Directors—1st. J. J. Roy, Detroit. 2d. S. S. De Wolfe, Hart. 3d. J. Russell, Elsie. 4th. A. McKercher, Lansing. 5th. Chas. Stirling, Clare. 6th. H. E. Rea, West Branch.

Upon conclusion of election, Dr. C. C. Stevens gave a very interesting address upon some extraordinary parasites found in sheep and horses in his practice.*

Dr. G. W. Dunphy gave an excellent and timely paper upon the subject of "Organization; Its Advantages and Possibilities."

This subject coming up at this time when we are practically in need of uniting our forces to accomplish some legislation along live stock sanitary lines, was very opportune. It was very unfortunate that the subject did not receive consideration at this meeting. Dr. Morris, State Veterinary Surgeon, discussed this paper.

Dr. T. F. Krey, of P. D. & Co., presented a very able and interesting paper upon the prolific subject, "Biological Therapeutics in Veterinary Medicine." Papers of this kind are the ones that, when missed by being absent from meetings, are a decided loss, as progressive veterinarians should not be deprived of listening to and discussing these recent additions to our therapeutics.

Dr. Ward Giltner, M. A. C., at this time concluded a report of the Committee on Disease. He said that it had been concluded that the mysterious disease reported by Dr. Deadman, in Soo District last year, was swamp fever. Not much glanders, but tuberculosis, we have always with us. As to contagious abortion, Dr. Giltner said that if he was to report on it every year for the next ten years, there would be still something new. Concluded by reading an abstract of the Committee of the British Board of Agriculture and Fisheries on "Epizootic Abortion."

Dr. L. M. Hurt gave an excellent paper on "Internal Administration of Carbolic Acid." This was another good subject, handled in a pleasing manner. He went very thoroughly into a description of a number of cases he had observed during the past year.

Dr. Thos. Farmer gave a good paper on "Diseases of Young Animals," which elicited a good discussion by G. R. Switzer, G. W. Dumphy and others.

* Appears under Reports of Cases in this issue.

Dr. T. G. Duff, representative of the A. V. M. A. at Chicago meeting, gave a very good report of his observations while in attendance at this meeting. This report was read by Dr. Jopling, secretary pro tem.

Dr. W. S. Hamilton, an active and valued member, having been taken by death since our last meeting, a committee was appointed to draft suitable resolutions of respect in condolence. Drs. Brodie, Sutherland and Cumming were appointed as such committee.

Dr. Wm. Jopling gave an interesting account of a persistent case of apparent impaction, and exhibited an intestinal calculus that was found upon post mortem. This concretion was ovoid in shape, very irregular, rough surface, and about 4 by 5 inches. It was found at the lower end of the floating colon.

Dr. C. C. Mix gave a very interesting talk on the attitude the association should assume, and how far they should go, in the prosecuting of unlicensed practitioners, and advocated that a committee be appointed by the association and provided with stationery, and that they write to such persons, send them a copy of the law, and advise them to discontinue violating the law or suffer the consequences.

Dr. Mix moved that such a committee be appointed, and that the secretary provide them with stationery and pay necessary postage. Supported by Dr. Hawkins, who said that such a committee, in his opinion, was a good idea. The motion was carried.

Dr. Krey said that in New Jersey some such procedure was adopted, and certainly made the "quacks" scarce.

Dr. Waldron said that evidently the non-registered and ineligible from the other states were looking for a harbor of refuge from the applications that came to the Board for copies of Michigan veterinary law.

A motion was carried that we hold our next annual meeting at the Agricultural College at Lansing.

The Committee on Resolutions submitted the following:

"Whereas, It has pleased Almighty God to remove from our midst during the past year one of our most faithful and valued members, Dr. S. W. Hamilton, of Chelsea, therefore be it

"Resolved, That in his death the M. S. V. M. A. recognize the loss of one of its distinguished members who always upheld the dignity of the profession zealously, and whose genial nature endeared him to all who had the pleasure of his acquaintance.

"Be It Further Resolved, That we as an association extend to the bereaved widow and family our most sincere sympathy, and that a copy of these resolutions be spread upon the records of the association and a copy be sent to the bereaved family.

(Signed) D. G. SUTHERLAND,
J. W. BRODIE,
D. CUMMING."

Resolution adopted.

Retiring President Muir called President-elect Brodie to the rostrum and handed him the gavel. Dr. Brodie thanked the association for the honor they had conferred upon him and hoped that under his administration the present prosperity of the association would continue.

JUDSON BLACK, Secretary.

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

The twenty-eighth annual meeting of the Michigan State Veterinary Medical Association was called to order by the secretary in the absence of President Muir and also all the vice-presidents, in the lecture room, Bacteriological Building, Agricultural College, Lansing, February 8, 1910, at 3 o'clock P. M. Roll-call showed the following members present: Drs. Dumphy, Brenton, Ward, McKercher, Giltner, Hawkins, Marshall, Gohn, Moody and Black.

There being the quorum present, as required by the by-laws, business was proceeded with, all the above members being present at Saginaw except Gohn.

It was moved and supported that the reading of the records of the Saginaw meeting on January 25-26 be dispensed with at this time. Carried.

Moved and supported that the election of the new members elected at the Saginaw meeting be confirmed. Carried.

Moved and supported that the secretary be instructed to issue certificates of membership to Drs. Thos. Packwood, of Brown City, and Dr. Wm. I. Franciose, of Kalamazoo, upon receipt of satisfactory evidence of their resignation by the State Board. Carried.

Moved and supported that the election of officers elected at Saginaw meeting be ratified. Carried.

Dr. T. F. Krey was appointed as representative from this association to the next meeting of the A. V. M. A.

Moved and supported we adjourn. Carried.

JUDSON BLACK, Secretary.

THE ONTARIO VETERINARY ASSOCIATION.

The annual meeting was held in the Ontario Veterinary College, Toronto, on Friday, December 24, 1909.

Dr. F. G. Hutton, the president, opened the meeting with a few introductory remarks.

The minutes of the previous meeting, and reports of the committees during the year were read and confirmed.

The secretary reported a large amount of correspondence, many letters relating to better legal protection for our profession. Also he gave Colonel Robertson's report on being unsuccessful with our bill before the Agricultural Committee, and that rather than have it thrown out, or put through in an unsatisfactory manner, it was withdrawn from the committee, on the understanding that it would be brought up again at the coming session. He also reported the prosecution of a man named Jaques, of Dundas, Ont., for illegally advertising as a veterinary surgeon. He was doing so under a so-called diploma from the "London Veterinary Correspondence School." His illegal advertising was promptly stopped.

The following new members were proposed and accepted: J. G. McPherson, Toronto; J. M. Ramsay, Mongolia; W. R. Carr, Blythe; T. Scrivener, Edgeley; A. A. Carrie, Creemore; W. Harrison, Ingersol; O. Reist, Kossuth.

Dr. C. E. S. Baird gave a useful address on meat inspection. He had visited a large number of packing houses, and gave statistics of the losses. He reported several cases of hogs condemned in the neighborhood of Woodstock.

Dr. J. G. Rutherford, Veterinary Director-General, spoke on meat inspection, and strongly advocated general public meat inspection. He also gave a full and detailed statement of the efficient manner that the department under his control has carried out his instructions.

Dr. Grange, principal of the Ontario Veterinary College, strongly supported the view of both meat and dairy inspection, and received much applause from the meeting for his address on this subject.

At one o'clock the meeting adjourned for luncheon.

On the opening of the meeting after luncheon Dr. C. Elliott brought forward the matter of the proposed new Veterinary Act.

Dr. Mole brought forward a report of the Toronto Veterinary Medical Association; it was handed in and submitted to the meeting, received and filed. It contained very full information and the proposed new Veterinary Act.

Dr. Cowan spoke on the new Act and recommended it being brought forward as a government measure.

Different committees were formed to push onward the new legislation, and to "lobby" in the Ontario Legislature in the interest of the new Act.

By request, Dr. W. J. R. Fowler gave a short and practical account of the actions and doses of Aloin, calomel, nux vomica and barium chloride.

The subject was brought forward as to the date of the annual meeting of the Ontario Veterinary Association. On this matter there was considerable discussion. It was ultimately decided that our annual meeting shall be in the first week in August of each and every year.

The election of officers for the ensuing year then took place, with the following result:

President—C. E. S. Brind, V.S.

First Vice-President—W. Mole, V.S.

Second Vice-President—H. E. Hurd, V.S.

Secretary-Treasurer—C. Heath Sweetapple, V.S.

Assistant Secretary—W. J. R. Fowler, V.S.

Directors—E. A. A. Grange, V.S.; C. S. Macdonald, V.S.; S. Coulton, V.S.; C. Elliott, V.S.; W. Steele, V.S.; T. H. Lloyd, V.S.; T. E. Watson, V.S.; T. Babe, V.S.

Auditors—J. H. Reed, V.S.; C. Elliott, V.S.

Representative to the Canadian National Exhibition, Toronto—Andrew Smith, F.R.C.V.S.

Representatives to the Western Fair, London—J. D. O'Neil, V.S.; W. J. Wilson, V.S.

Delegate to the American Veterinary Medical Association—
E. A. A. Grange, V.S., Principal, Ontario Veterinary College.

C. H. SWEETAPPLE, Secretary.

MANITOBA VETERINARY ASSOCIATION.

The annual meeting of the Manitoba Veterinary Association was held in the offices of the Dominion Department of Agriculture, Portage avenue, Winnipeg, on Thursday, February 17, 1910. The meeting opened with the business session at 9.30 A. M. The president, Dr. J. Welch, of Roland, occupied the chair, and the following members were present: Drs. W. E. Martin, C. D. McGilvray, W. Hilton, W. A. Dunbar, M. B. Rombough, J. D. McGilvray, A. E. Williamson, C. Little, S. Martin, J. B. Still, H. Pomfret, H. D. Smith, Hilliard and Westall, Winnipeg; Dr. J. A. Stevenson, Gretna; W. H. McKenzie Emerson; C. A. Stevenson, Reston; A. G. Husband, Belmont; L. McQueen, Selkirk; J. Irwin, Stonewall; J. A. Swanson, Manitou; J. M. Young, Rapid City; H. Bradshaw, Portage-la-Prairie; J. Mack, Neepawa; J. F. Braund, Boissevain; S. Robinson, Brandon; Dr. Hayter, Birtle; Dr. Cline, Glenboro; and the secretary-treasurer, Dr. F. Torrance, Winnipeg.

The secretary read the minutes of the last annual meeting, which, on the motion of Dr. C. D. McGilvray, seconded by Dr. J. Irwin, were adopted as read.

The auditors' report for the past year was also adopted on the motion of Dr. Rombough, seconded by Dr. Cline.

The secretary-treasurer and registrar then submitted his report and financial statement, the latter showing a very satisfactory state of affairs, the balance on hand being \$405.82, and on the motion of Dr. J. A. Stevenson seconded by Dr. Dunbar, the report was unanimously adopted.

The election of officers then took place, resulting as follows:

Council—Dr. F. Torrance, Winnipeg; Dr. C. D. McGilvray, Winnipeg; Dr. J. A. Stevenson, Gretna; Dr. W. E. Martin, Winnipeg; Dr. W. A. Dunbar, Winnipeg; Dr. H. Bradshaw, Portage-la-Prairie; and Dr. S. Coxe, Brandon.

The council then elected the following officers:

President—Dr. W. A. Dunbar, Winnipeg.

Vice-President—Dr. H. Bradshaw, Portage-la-Prairie.

Secretary-Treasurer and Registrar—Dr. F. Torrance, Winnipeg.

Examiners—Drs. F. Torrance, C. D. McGilvray and W. E. Martin, Winnipeg.

The secretary read a communication from the American Veterinary Medical Association, being an invitation from that association to send a delegate from the Manitoba Veterinary Association to attend their annual meeting, to be held in San Francisco, September 6 to 9, 1910, and after some discussion, it was decided to appoint a delegate to attend that meeting, and that the appointment be left with the council.

AFTERNOON SESSION.

A good attendance was in evidence when the new president, Dr. Dunbar, called the meeting to order.

The meeting was opened with a very able address from Dr. Gordon Bell, Provincial Bacteriologist, upon "Laboratory Methods of Diagnosing Rabies," who illustrated his address with prepared slides, demonstrating Negri bodies.

"Some Obscure Febrile Diseases of Horses" was the title of an excellent paper read by Dr. C. D. McGilvray.

Dr. O'Brien (M.D.), Dominion City, followed with an address on "Human Febrile Affections Occurring on Farms Coincident with Fever Among the Horses."

A paper sent in to the meeting by Dr. W. Little, of Boissevain, on "Septic Arthritis of Foals" was read by Dr. Torrance, and was productive of an interesting discussion.

Dr. R. H. Cook, of the Federal Meat Inspection Division, then read a very able paper on "Contagious Abortion," treating the subject in a very comprehensive manner, which was well received by the meeting, provoking considerable discussion.

The annual banquet was held in the Manitoba Hall at 7 P. M., the chair being occupied by the president, Dr. W. A. Dunbar. About twenty-five members were present, and a most enjoyable evening was spent, enlivened with vocal and instrumental music.

It was decided to hold the semi-annual meeting in Winnipeg, at a date to be agreed upon by the council.

F. TORRANCE, Secretary.

B. A. I. VETERINARY INSPECTORS' ASSOCIATION OF CHICAGO.

At the regular annual election of officers of the B. A. I. Veterinary Inspectors' Association of Chicago, Friday evening, February 11, 1910, Dr. S. E. Bennett was unanimously chosen to succeed himself for president, with Dr. A. A. Holcombe as vice-president and Dr. A. F. Schalk secretary-treasurer for the ensuing year.

Dr. O. J. Lanigan, in behalf of the Food-Hygiene Committee, read a very interesting and instructive article on "Sterilization of Canned Goods." Dr. Lanigan treated the subject in a most exhaustive manner.

Mr. A. H. Roop, chief chemist of the Chicago division of the bureau, presented the last paper of the evening on "Rancidity and Free Fatty Acids in Fats and Oils." Mr. Roop made a very comprehensive and thorough presentation of his subject. This paper proved exceptionally interesting to bureau men. Lengthy discussion followed, in which Drs. Day, Paxson, Holcombe and Johnstone participated.

A. F. SCHALK, Secretary-Treasurer.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.

The regular meeting of this association was held in the lecture room of the New York American Veterinary College, Wednesday evening, March 2. The president, Dr. E. B. Ackerman, presided. The minutes of the previous meeting were read and approved.

After the usual routine business had been transacted, Dr. Thos. B. Rogers, of Woodbury, N. J., addressed the meeting on the subject of "Serum Therapy." Dr. Rogers has experimented extensively with this method of treatment in various infectious diseases, both as preventive and curative agents, and he related some interesting facts in connection with the treatment of strangles, purpura, anthrax, tetanus and distemper in dogs. At the conclusion of his remarks Dr. Rogers showed many lantern slides illustrating the various pathogenic bacteria.

Dr. W. J. Coates, Dean of the New York American Veterinary College, gave an illustrated lecture on "Anatomy of the Horse," showing about seventy excellent lantern slides, which were much enjoyed by all present.

Drs. Rogers and Coates were given a hearty vote of thanks for their contributions to the evening's program.

The president announced the recent sudden death of one of our members, Dr. Chas. S. Atchison, of Brooklyn. Drs. McCully, Ellis and Clayton were asked to serve as a committee to draw up suitable resolutions and forward same to Dr. Atchison's family.

The resolutions follow:

Whereas, It has pleased Almighty God to remove from our midst Dr. Chas. S. Atchison, a valued member of this association, and realizing the loss, not only to ourselves, but to the profession, therefore, be it

Resolved, That we, a committee representing the Veterinary Medical Association of New York City do deeply deplore his loss; his amiability and sincerity having endeared him to all with whom he came in contact; and be it further

Resolved, That we offer to his family our heartfelt sympathy, and that a copy of these resolutions be spread upon the minutes of this association and also one be sent to his family.

(Signed) R. W. McCULLY.
C. E. CLAYTON.
R. W. ELLIS.
W. REID BLAIR, Secretary.

MAINE VETERINARY MEDICAL ASSOCIATION.

This association held its quarterly meeting January 11, 1910, at the New Augusta House, Augusta, Maine. The following members were present: viz., Drs. F. W. Huntington, C. H. Newton, F. E. Freeman, R. E. Freeman, F. L. Russell, E. F. Russell, I. L. Salley, W. H. Lynch, W. H. Robinson, C. H. McGillicuddy, A. Joly, C. W. Watson, J. A. Ness and C. L. Blakely.

The reports of Secretary Dr. Joly and Treasurer Dr. I. L. Salley were read and duly accepted.

The secretary's report showed that the association had gained in numbers, and wonderfully so in attendance in the past year, and that members are taking hold with new interest and striving to make our association meetings helpful and instructive.

The treasurer's report showed a good balance on the right side of ledger. As this was the annual meeting and the time for election of officers, the election took place with the following results: President, Dr. A. Joly, Waterville; Vice-President, Dr. W. S. Lord, Portland; Treasurer, Dr. I. S. Salley, Skowhegan; Secretary, Dr. C. L. Blakely, Augusta.

President Dr. Joly appointed the following committees, viz.:

Executive Committee—Drs. F. L. Russell, F. E. Freeman and W. H. Lynch.

Legislative Committee—Drs. A. Joly, A. L. Murch, C. L. Blakely, I. L. Salley and J. A. Ness.

Banquet Committee—Drs. A. Joly, I. L. Salley and C. L. Blakely.

Dr. C. L. Blakely read a paper on "Fistulous Tracts and Their Treatment," which created considerable discussion.

At 8 P. M. all adjourned to the banquet hall, where a first-class supper was thoroughly enjoyed by all. Dr. Joly as toast-master called upon each one in turn to say a few words, and a very pleasant hour was passed smoking and listening to the different orators (?). It was voted to meet on April 10, 1910, at the Bangor House, Bangor. Drs. Murch, F. L. Russell and C. H. Newton were appointed to read papers. Meeting adjourned at a late hour.

C. L. BLAKELY, Secretary.

YORK COUNTY VETERINARY MEDICAL ASSOCIATION.

This association held its annual meeting March 15, at York. There was a good attendance and an interesting meeting. All the officers were re-elected for another term, which means that Dr. H. E. Kline, York, is president; Dr. J. D. Smith, Dallas, is first vice-president; Dr. W. E. Cranmer, Hanover, is second vice-president; Dr. E. S. Bausticker, York, is secretary, and Dr. Charles Lenhart, York, is treasurer.

The June meeting will also be held in York.

E. S. BAUSTICKER, Secretary.

NEWS AND ITEMS.

TWENTY-FIFTH ANNUAL REPORT OF THE BUREAU OF ANIMAL INDUSTRY.—The twenty-fifth annual report of the Bureau of Animal Industry of the United States Department of Agriculture, just published, is an illustrated clothbound volume of 502 pages containing special articles and information of both popular and scientific interest. This report is issued as a Congressional publication, and a limited number of copies are assigned to each Senator, Representative and Delegate in Congress for distribution among his constituents. The Department has no copies for general distribution, its quota being required for its employees and such outsiders as co-operate in its work. The book is on sale to the public by the Superintendent of Documents, Government Printing Office, Washington, D. C.

Tuberculosis in its various aspects is the subject of three articles. Dr. A. D. Melvin, the Chief of the Bureau, in considering the economic importance of this disease among the food-producing animals, estimates that the financial loss from this cause is at least \$24,000,000 annually. Dr. E. C. Shroeder, superintendent of the Bureau's experiment station, points out the danger from the tuberculous cow to human health. His paper is accompanied by a number of striking illustrations showing cows of fine appearance which are really affected with tuberculosis and giving off the germs of that disease in such a way as to be dangerous to consumers of their milk. Drs. John R. Mohler and Henry J. Washburn, of the Pathological Division, have a paper dealing with the causation and character of animal tuberculosis and federal measures for its repression.

The Bureau's field experiments with serum for the prevention of hog cholera are described in a paper by Dr. W. B. Niles. Doctor Melvin in another paper presents a plan for the control of hog cholera by the systematic use of serum.

Three diseases of live stock about which little has heretofore been known, namely, infectious anemia or swamp fever of horses, mycotic lymphangitis of horses, and chronic bacterial dysentery of cattle, are described in an article by Dr. John R. Mohler. An article by Dr. R. J. Formad presents the results of an investigation as to the damage caused to the live stock industry by smelter fumes in the Deer Lodge Valley of Montana. Dr. B. H. Ransom

describes methods of preventing losses from stomach worms in sheep. The results of experiments to determine the length of time that typhoid bacilli will remain alive in milk and butter are given in an article by Dr. Henry J. Washburn.

George M. Rommel, in "Notes on the Animal Industry of Argentina," gives information about that country, which is a growing competitor with the United States for the English meat trade.

In a paper on "Improved Methods for the Production of Market Milk by Ordinary Dairies," Messrs. C. B. Lane and Karl E. Parks describe simple and inexpensive methods within the reach of the average dairyman by which clean and wholesome milk may be produced.

The outbreak of foot-and-mouth disease which appeared in November and December, 1908, among live stock in Michigan, New York, Pennsylvania, and Maryland, is described in a paper by Dr. A. D. Melvin. After a few months of vigorous work by federal and state officers, the disease was eradicated at an expense of over \$300,000 to the Department of Agriculture and about \$113,000 to the states.

The history of an importation of Maltese goats by the Department of Agriculture a few years ago, and a description of Malta fever, are presented in an article by Drs. John R. Mohler and George H. Hart. The goats, which were imported with a view to building up a milch goat industry in this country, were found to be affected by Malta fever, a disease which prevails to a considerable extent among people as well as goats on the Island of Malta and other places on the Mediterranean. After keeping the goats under strict quarantine for some time, it was finally considered necessary to destroy them all.

Other articles contained in the report are as follows: "The Need of State and Municipal Meat Inspection to Supplement Federal Inspection," by Dr. A. M. Farrington; "State Legislation Regulating the Standing of Stallions and Jacks for Public Service," by Roy A. Cave; "The Development of Live Stock Shows and Their Influence on Cattle Breeding and Feeding," by E. G. Ritzman; "The Value of the Poultry Show," by Rob R. Slocum. The volume also contains statistics of the live stock markets and meat inspection and other miscellaneous information regarding the live stock industry.

Some of the articles in the report have been issued separately in pamphlet form and can be obtained in this form on application to the Department of Agriculture.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
Alumni Ass'n. N. Y.-A. V. C.....	Sept. 6, 7, 8, 9, 10	141 W. 54th St. San Francisco.	J. F. Carey, East Orange, N. J. R. P. Lyman, Kansas City, Mo. Horace E. Rice, Little Rock.
American V. M. Ass'n.....	1st and 3d Thur. of each month	Lec. Room, Laval Un'y, Mon.	J. P. A. Houde, Montreal.
Arkansas Veterinary Ass'n.....	2d Fri. ea. mo.	Chicago.....	A. F. Schalk, Chicago, Ill.
Ass'n Médécalle Vétérinaire Française "Laval".....	2d Tues. ea. mo	San Francisco.	J. J. Hogarty, Oakland.
B. A. I. Vet. In. A., Chicago.....		Ottawa.....	A. E. James, Ottawa.
California State V. M. Ass'n.....		Chicago.....	J. M. Parks, Chicago.
Central Canada V. Ass'n.....		Denver.....	M. J. Woodliffe, Denver.
Chicago Veterinary Society.....			B. K. Dow, Willimantic.
Colorado State V. M. Ass'n.....			J. H. Taylor, Henrietta.
Connecticut V. M. Ass'n.....			P. F. Bahnsen, Americus.
Genesee Valley V. M. Ass'n.....			Louis P. Cook, Cincinnati.
Georgia State V. M. A.....			J. H. Crawford, Harvard.
Hamilton Co. (Ohio) V. A.....			W. A. Swain, Mt. Pulaski.
Illinois State V. M. Ass'n.....	Jan. and Aug.	Louisville.....	E. M. Bronson, Indianapolis
Illinois V. M. and Surg. A.....			H. C. Simpson, Denison.
Indiana Veterinary Association.....			B. Rogers, Manhattan.
Iowa Veterinary Ass'n.....		Not decided.	D. A. Piatt, Lexington.
Kansas State V. M. Ass'n.....	Monthly.....	Philadelphia.	S. Lockett, Glenolden.
Kentucky V. M. Ass'n.....			E. F. Flower, Baton Rouge.
Keystone V. M. Ass'n.....	April 10, 1910.	Bangor.....	C. L. Blakely, Augusta.
Louisiana State V. M. Ass'n.....		Baltimore.....	H. H. Counselman, Sec'y.
Maine Vet. Med. Ass'n.....	Monthly.....	Boston.....	Wm. T. White, Newtonville.
Maryland State Vet. Society.....			Judson Black, Richmond.
Massachusetts Vet. Ass'n.....			G. Ed. Leech, Winona.
Michigan State V. M. Ass'n.....			J. C. Robert, Agricultural Col.
Minnesota State V. M. Ass'n.....			B. F. Kaupp, Fort Collins, Colo.
Mississippi State V. M. Ass'n.....			F. F. Brown, Kansas City.
Missouri Valley V. Ass'n.....	July 1910.....	Omaha.....	W. S. Swank, Miles City.
Missouri Vet. Med. Ass'n.....		St. Joseph.....	H. Jensen, Weeping Water.
Montana State V. M. A.....		Helena.....	J. F. De Vine, Goshen.
Nebraska V. M. Ass'n.....		Grand Island.	Adam Fisher, Charlotte.
New York S. V. M. Soc'y.....		Ithaca.....	C. H. Martin, Valley City.
North Carolina V. M. Ass'n.....	Jan. 1911.....	Wilmington.....	Sidney D. Myers, Wilmington
North Dakota V. M. Ass'n.....		Fargo.....	F. F. Sheets, Van Wert, Ohio.
Ohio State V. M. Ass'n.....	Annually.....	Up'r Sandusky	R. A. Phillips, Oklahoma City
Ohio Soc. of Comparative Med.			
Oklahoma V. M. Ass'n.....	1st week in Aug. each year.....		C. H. Sweetapple, Toronto.
Ontario Vet. Ass'n.....	Call of Chair.....	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Passaic Co. V. M. Ass'n.....			Chas. G. Thomson, Manila.
Philippine V. M. A.....	Jan. and June.....	Mon. and Que.	Gustave Boyer, Rigaud, P. Q.
Province of Quebec V. M. A.....	1st Wed. fol. the 2d Sun. ea. mo.	Providence.....	J. S. Poilard, Providence
Rhode Island V. M. A.....	June 15, 1910.....	St. Louis.....	Wm. T. Conway, St. Louis, Mo
St. Louis Soc. of Vet. Inspectors.	July, 1910.....	Reading.....	W. G. Huyett, Wernersville.
Schuylkill Valley V. M. A.....		Philadelphia.....	B. T. Woodward, Wash'n, D. C.
Soc. Vet. Alumni Univ. Penn.....		Sioux Falls.....	J. A. Graham, Sioux Falls.
South Dakota V. M. A.....	Jan. Apl. Jy. Oct.	Los Angeles.....	J. A. Edmonds, Los Angeles.
Southern Auxiliary of California State V. M. Ass'n.....	4th Tues. ea. mo.	407 Ill. Ave.....	H. R. Collins, So. St. Joseph.
So. St. Joseph Ass'n of Vet. Insp.	Call Exec. Com.		A. C. Topmiller, Murfreesboro
Tennessee Vet. Med. Ass'n.....	2d Thu. ea. mo.	St. P.-Minneap	R. P. Marsteller, College Sta.
Texas V. M. Ass'n.....			S. H. Ward, St. Paul, Minn.
Twin City V. M. Ass'n.....			G. T. Stevenson, Burlington.
Vermont Vet. Med. Ass'n.....			C. H. H. Sweetapple, For.
Veterinary Ass'n of Alberta.....			Saskatchewan, Alta., Can.
Vet. Ass'n Dist. of Columbia.....	3d Wed. ea. mo.	514—9th St., N. W.	M. Page Smith, Wash., D. C.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
Vet. Med. Ass'n of N. J.....	1st Wed. ea. mo.	141 W. 54th St.	W. Herbert Lowe, Paterson.
V. M. Ass'n, New York City.....	Monthly.....	Jersey City.....	W. Reid Blair, N. Y. City.
Veterinary Practitioners' Club.....			A. F. Mount, Jersey City.
Virginia State V. M. Ass'n.....	1st & 3d Fri. Eve.	Pullman.....	W. G. Chrisman, Charlo'sv'le.
Washington State Col. V. M. A.....			R. G. McAlister, Pullman.
Washington State V. M. A.....	1st Wed. ea. mo.	Seattle.....	J. T. Seely, Seattle.
Western Penn. V. M. Ass'n.....		Pittsburgh.....	F. Weitzell, Allegheny.
Wisconsin Soc. Vet. Grad.....		Grand Rapids.	J. P. West, Madison.
York Co. (Pa.) V. M. A.....			E. S. Bausticker, York, Pa

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The two advertisements of ERNST BISCHOFF & Co., on pages 1 and 13 hold some excellent preparations for veterinary use. The Catalogue of this house will be found of great value, as it furnishes a list of up-to-date importations.

Spring coughs have a tendency to "hang on." GLYCO-HEROIN (SMITH) is an ideal preparation to break them up.

ATLAS HORSE FEED is good at any time, but it is especially indicated at this season, as it aids in the "shedding of coats" like Spring grass. The only difference being that the latter is usually not available, and the former always is. You will find their address in this number of the REVIEW among the advertisements.

Novocain is one of the few safe local anesthetics for small animals available to the veterinary profession. Veterinarians not familiar with it, can obtain literature and samples by writing to VICTOR KOEHL & COMPANY, the agents for the United States, whose advertisement will be found on page 10 of this issue (Adv. Dept.).

"THE BUNTIN PERFECTION VETERINARY HYPODERMIC SYRINGE," is all that the name implies. It seems to be mechanically perfect, which means that one part will not wear another part out in its use, and it works perfectly. The needles are carried in the piston, so that the syringe may be carried in the pocket with safety without a case, and you always have the needles with you. The soluble hypodermic tablets of the Buntin house never disappoint.